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## ORIGINAL LECTURES.

### RINGWORM OF THE SCALP.

*A Clinical Lecture, Delivered at the College of Physicians and Surgeons of Chicago.*

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GENTLEMEN,—I wish today to engage your attention while I speak of the condition known as *tinea trichophytina*. Under this head are embraced what are usually described as three separate and distinct affections, viz., *tinea circinata*, or the common ringworm of the face and body, *tinea tonsurans*, or ringworm scalp, and *tinea sycosis*, or ringworm of the beard, called also *tinea barbæ*, barber's itch.

They are all embraced under the head parasitic diseases, and are produced by one of the three vegetable parasites, recognized as capable of producing skin diseases, viz., the *trichophyton tonsurans;* the other two forms of vegetable growth or parasite, as they are called, giving rise to the diseases known as *tinea favosa*, or favus, and *tinea versicolor*. These three forms of disease, then, while they differ in a measure, as regards their pathology and symptoms, are identical as regards their etiology, being produced by one and the same parasite; the difference in their manifestations being due entirely to the location.

I have here for your inspection a case of tinea tonsurans, or the disease as it is manifested in the scalp, and will today confine my remarks entirely to that form of the disease. Before examining the case, however, I think it advisable that you have a knowledge of the general characteristics of the disease. The parasite, on being deposited upon the skin, finds its way beneath the horny layer, and there commences its work. Soon a small reddish spot is seen. When first discovered, however, these spots are generally as large as a nickel five-cent piece, and covered with fine, somewhat adherent scales. They may be either multiple or single when first seen. They then increase in size and number, until soon several such patches are visible here and there over the scalp, varying in size from that of a dime to an inch or two in diameter. Something much more interesting as a diagnostic point, however, is generally apparent within the first few weeks of the existence of the disease, and usually when first seen by the physician; and what I now say has reference to the condition of the hairs. In our examination, the first thing we observe in this respect is a thinning of the hair, or partial baldness; but, upon still closer examination, we find that the hairs are broken off near the scalp, leaving stumps from one-eighth to a quarter of an inch in length. In a hasty, careless examination, these stumps of hairs may sometimes be overlooked, but by careful and close examination, I think, some of them may invariably be discovered when the patient is first seen by the physician. In addition to this the hairs will be found to be dry, lustreless and brittle, and may be removed from the patch by very slight traction, either breaking off near the skin, within it, or coming out entire, though I think hairs thus diseased are more likely to break upon traction. The subjective sensation is that of slight itching. More rarely we find a vesicular or pustular condition; the conditions, probably, most favoring this form of lesion being moisture and irritation. This disease, like all other parasitic diseases, is contagious.

The history of the case is as follows: The patient is 8 years of age, and has had the disease six weeks. Another child, in the same house, has a similar trouble, from whom this patient, he states, caught the disease. You will observe, as he passes around among you, first, several patches, from one-half to an inch and a half in diameter. You will also notice that the patches are covered with dry scales; that there is a decided thinning of the hair on each patch, and by a little closer inspection you will see very distinctly short stumps of hairs here and there over the patch. The patches are somewhat circular in form, and the patient gives a history of slight itching.

Now, while there are several other diseases which have features in common with this, there is no other disease that gives the above combination of symptoms. Perhaps the principal or only diseases which we might be called upon to exclude, in making a diagnosis, are eczema, psoriasis, favus, and seborrhœa. In eczema we have greater itching, always moisture; it generally crops out on the face or ears as well, and we never get the characteristic thinning and stumps of hairs; we have more inflammation and infiltration, no history of contagion, and the patches are not so accurately defined.

Psoriasis may be excluded by the absence of its characteristic white shiny scales, which on removal leave the almost pathognomonic red bleeding patch, and by the presence of the stumps of hairs which we do not have in psoriasis; and, moveover, psoriasis affects the whole body, the patches are smaller, and,

when the scalp is affected, the disease almost invariably fringes the brow on the non-hairy forehead.

Seborrhœa is a symmetrical affection of the scalp and never occurs in accurately defined circumscribed patches, and further, the scales are greasy, there are no stumps of hairs, etc.

In favus, which is another parasitic affection, we have, as in this disease, stumps of hairs, but we have other points of difference. We have in favus *crusting*, a form of lesion that is not common in tinea tonsurans. Besides, these crusts have features that are almost pathognomonic of favus, and that we never meet with in tinea tonsurans, viz.: They are *sulphur-colored* and *cup-shaped* or umbilicated. It will therefore be seen, that while from a hasty consideration of the gross features in a general way, an accurate diagnosis may seem difficult, by carefully considering the individual symptoms of each a diagnosis may be made with absolute certainty. It is well to remember, however, that stumps of hairs, to say the least, are always suggestive of parasitic trouble. There is still, however, another diagnostic point, to which I have not yet called attention, and which will in any case, *per se*, clear up the question; that is, the discovery of the parasite with the microscope; to which subject I will again call your attention at the close of the lecture.

As regards the etiology, the disease is, of course, always the result of contagion, the propagating element being the parasite or vegetable growth known as the *trichophyton tonsurans*.

As to the pathology, it is essentially a disease of the hair and hair follicles, the invasion of the hair structure by the parasite being the cause of the brittle, dry, lustreless condition of the hair, and the same condition in the root causing atrophy of the bulb, etc. This brings us to the question of treatment.

The disease being of parasitic origin, and the deep structures—hair follicles, etc.—being involved, the treatment, in order to be effectual, must be such topical application as will be capable of destroying the parasite, and must likewise be used in such a form or way as to penetrate to the bottom of the follicles. Any of the ordinary parasiticide remedies may be used, and are capable of curing the disease, provided the remedy come in contact with parasite. But this is not always so easy of accomplishment, and to facilitate matters epilation, or the removal of the hairs, has been practiced, with a view to allowing the remedy to penetrate to the bottom of the follicles, and with apparent advantage in stubborn cases. Among the remedies used may be mentioned the various preparations of mercury, iodine, sulphur, chrysarobin, pyrogallic acid, chloroform, ether, etc. The mercury may be applied in the form of the bichloride, grs. x to aqua ℥i; iodine in the tincture. The hyposulphite, or the sulphite of sodium, a drachm to the ounce of water, will be found one of the best remedies. In any case, before applying the remedy, the surface should be thoroughly cleansed by the free use of green soap and hot water. In this case we will apply a solution of chrysarobin 15 grs. to the ounce of chloroform, which should be thoroughly and frequently applied. The chloroform has a tendency to dissolve sebaceous and other fatty or gummy matters away, and thereby facilitate the penetration of the remedy down into the follicles. If this proportion seem to create irritation, the strength must be diminished. Care should always be taken to avoid contagion through the medium of combs, towels, brushes, etc.

We will now briefly refer to the discovery of the parasite with the microscope. I now take from the patient's head, as you see, one of these stumps of hairs and also from this gentleman's head a healthy hair, having the piece of sound or normal hair longer than the diseased one. The patient's hair, as you see, is much lighter in color than the normal hair which we take from the gentleman's head. We now moisten these with a little water on the glass side and place them under a magnifying power of about four hundred diameters. The first thing you now notice, as you each examine this specimen, is that the patient's hair, which is normally lighter in color, is much darker under the microscope than the healthy one. The explanation of this is, that the diseased hair structure is so stuffed full of the spores of this vegetable fungus, that it renders it opaque, and hence darker in color than the sound hair. The next thing you may notice is a great number of small, round or globular bodies all along each side and at the end of the diseased hair; while the normal hair will be seen to be entirely free from these bodies. In other places near the diseased hair you will see, here and there, large clusters of these same bodies. Now this trichophyton tonsurans, or vegetable growth of parasite, as it is called, is made up of what are termed spores, and mycelia or thread-like bodies; and the round bodies I now call your attention to are the spores; and in this way, by placing a sound and diseased hair close together on the same side so that both come into the field at once to be examined and contrasted at the same time, the condition may be ascertained with positiveness by the most obscure.

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## ORIGINAL ARTICLES.

### THE COMPARATIVE VALUE OF THE NEW AND OLD TESTS FOR ALBUMEN AND SUGAR IN URINE.[1]

BY H. H. FROTHINGHAM, M.D.,

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The importance of reliable and convenient methods of detecting the presence of albumen and sugar in the urine, as well as the quantitative estimation of each, must be recognized by every practicing physician as a diagnostic measure, and by every medical chemist as a means toward deciding that, at present, contested point—their presence or absence in physiological urine. As every reagent known has its sources of error, the question is not which is perfect, but which is least objectionable. As several

[1] To which was awarded the "Faculty Prize" for the best thesis presented by the graduating class of 1885 of the Chicago Medical College.

new tests have been proposed for the detection of each of these substances in urine, and each of the reagents has supporters, who in turn consider each the most valuable, it seems desirable that some practical conclusion be reached. In this paper the more reliable of the older tests will be contrasted with the newer; and as the former have held the field so long, from their priority, if no other claim were advanced, they are entitled to a hearing; furthermore, it must be shown that the newer reagents are more valuable.

In order to possess the greatest value to the practicing physician, a test must combine *delicacy* and *accuracy* with *convenience* and *cleanliness*.

I. ALBUMEN.—Picric acid was first used for the detection of this constituent of abnormal urine by M. Galippe.[1] In 1883 Dr. Geo. Johnson[2] again directs attention to its use in this connection, his claims being substantially as follows: 1. That the reagent shows albumen in very dilute solution; 2. that it is more cleanly than nitric acid; 3. that the precipitate of picrate of albumen is readily distinguished from the similar compound with peptone, by the easy solubility of the latter upon heating; 5. that it may be carried in the pocket with safety, and so used at the bedside; 5. that it is especially valuable over nitric acid, in that a small quantity of the reagent does not prevent subsequent coagulation, and an excess does not dissolve the coagulum. Dr. Johnson's method of applying the test is to add first a vegetable acid to the urine until an acid reaction is obtained; then a few drops of a saturated aqueous solution of the reagent, or a little of the acid in dry powder, or a test paper previously saturated with the aqueous solution and dried. If albumen be present it is coagulated upon heating. The writer states later in the same article that he considers the acidulation of the urine unnecessary, as the reagent itself has a faintly acid reaction.

Tungstate of sodium was brought forward by Dr. Oliver,[3] of London, as a reagent of great sensitiveness, convenience and cleanliness. The method of testing with this reagent is, first to acidulate the urine with a vegetable acid; then add a few drops of the reagent in solution, or a test paper in which it has been incorporated. Upon heating, a cloudiness will be observed, the opacity of which depends upon the proportion of albumen in solution.

Dr. Oliver also conceived the idea of saturating bibulous paper with solutions of various reagents, to be used in testing for albumen and sugar. An aqueous solution of mercuric chloride and potassium iodide, first announced by M. Tanret, in 1872, is advocated by Bouchard,[4] who says, referring to its use: "Every precipitate which persists after the employment of heat is due to the presence of albumen." Dr. G. Neville Stephen[5] advocates its use principally on account of its delicacy; and has also devised the following formula for quantitative work:

℞. Potassii iodidi.....3.22 grm.
Hydrargyri bichloridi...1.35 grm.
Aquæ destillatæ.....100 c.c.

"One drop of this from a pipette giving a drop of .05 grm., precipitates .005 grm. of albumen." Dr. Roberts[1] uses a saturated solution of common salt in five per cent. hydrochloric acid. Ferrocyanide of potassium with acetic acid, phenol, and a mixture of phenol and alcohol, have all been recommended; but only the first named will be considered. The nefficiency of the others is apparent to any one who has mixed carbolic acid and water.

Exact quantitative estimation of albumen in urine can be made only by complete separation from a known bulk and weighing. This can be done only by methods so complex and requiring so much time as to be impracticable to any but a professional chemist who has apparatus at hand. A number of processes have been devised, however, for the approximate estimation. Of these the more important are: 1. That of Dr. Stephen, mentioned above. 2. That recommended by Dr. Franklyn,[2] which consists of the comparison of the bulk or a precipitate obtained by nitric acid and heat with that of a known weight of albumen, coagulated in the same way. To quote Dr. Franklyn's article: "According to Pavy,[3] white of egg contains $^1/_5$ by weight of pure albumen. If one minim of white of egg be diluted by one hundred minims of water, nitric acid and heat give a precipitate of 12½ minims in a graduated tube; *i. e.*, a solution of $^1/_{500}$ by weight of pure albumen *indicates a proportion of ⅛ by bulk.* To determine the amount of albumen in the urine, the whole amount for twenty-four hours must be collected, the precipitate by nitric acid well broken up by pouring from one tube to another, and ailowed to settle. By comparison of bulk with the ⅛ of known weight,—*e. g.*, suppose the bulk to be ⅓ and the quantity for twenty-four hours 50 ozs., then $^1/_{500}$ (weight of ⅛ of 100) × 50 ozs. = $^1/_{10}$ oz.,—the whole amount, is shown."

5. Another method applied to sodium tungstate[4] is by comparing the opacity in a given sample with an *opacity of known value;* using as a standard a precipitate obtained from alum solution by ammonia, corresponding to a precipitate from a solution of pure serum albumen of one per cent. strength. "By diluting the urine under observation to this shade of opacity, the amount of albumen is easily estimated, as each volume of dilution corresponds to one decimal per cent. of albumen. For example, 10 diluted to 120 equals 1.2 per cent. To estimate the amount of albumen in each fluid ounce, it is only necessary to multiply the percentage by 4.36; and for the twenty-four hours' urine by the number of fluid ounces. The same author uses for comparison an opaque glass of a cloudiness corresponding to a known opacity of albumen precipitate.

4. Still another plan is that applied to the Heller or concentrated nitric acid test.[5] This method serves roughly to calculate the proportion of albumen in a given sample by the depth of the albuminous zone.

The objections to the first quantitative method are

[1] Medical Times and Gazette, London, 1874.
[2] British Medical Journal, December 8, 1883.
[3] Lancet, February 8, 1883; also "Bedside Urinary Tests."
[4] Le Lyon Médicale, November, 1876.
[5] Lancet, 1872.

[1] Lancet, October 14, 1882.
[2] London Lancet, May 10, 1884.
[3] "Food."
[4] Dr. Oliver, Lancet, May 24, 1884.
[5] Tyson's Prac. Exam. Urine, p. 45.

manifest, in that every practitioner does not have a pipette giving a drop of .05 grm., and later it will be shown that the iodo-mercuric fluid is open to grave objections as a reagent. The second method may be carried out approximately very easily, and the result is quickly translated. It may be said that egg and serum albumen coagulate in different bulk, the latter being more compact; but upon shaking well there is found to be little difference between the two. The third method is applied by sodium tungstate, and is practically useless, since it requires so much training and manipulation. The fourth method is very roughly quantitative, and complicated by various factors, as shown later in this article.

*Delicacy.*—In comparing the sensitiveness of the reagents mentioned with the more reliable of the older tests, viz., the "Heller's," and acid with heat, the writer pursued the following plan: A sample of clear urine of acid reaction (sp. gr. 102 ) was chosen. A portion of this, upon heating with 5 per cent. its bulk of dilute nitric acid, and being well shaken to break up the coagulum, yielded a precipitate occupying 20 per cent. of the whole bulk of the fluid; 50 cc. of the original urine was mixed with an equal bulk of normal urine forming mixture No. 1; 50 cc. of mixture No. 1 was similarly treated with normal urine, giving mixture No. 2; 50 cc. of mixture No. 2 was added to the same bulk of normal urine, making mixture No. 3; 50 cc. of mixture No. 3 similarly treated gave mixture No. 4; 50 cc. of mixture No. 4 yielded No. 5 similarly. Each of these mixtures was tested by all of the methods above enumerated, except the carbolic acid. The following table represents the result:

| | MIXTURE NO. I. | No. II. | No. III. | No. IV. | No. V. |
|---|---|---|---|---|---|
| Picric | Reaction. | Faint cloudiness. | Negative | Negative | Negative. |
| Tungstate | Reaction | Reaction | Reaction | Very faint. | Negative. |
| Iodo-merc | Reaction | Reaction | Reaction | Very faint. | Negative. |
| Heller's | Reaction | Obscure reaction. | Not determined. | Negative | Negative. |
| Ferrocyanide | Reaction | Very faint. | Negative | Negative | Negative. |
| Brine | Reaction | Very faint. | Negative | Negative. | Negative. |
| Acid and heat. | Reaction | Reaction | Reaction | Negative | Negative. |

Applying the rule of Dr. Franklyn for quantitative estimation, to these results, it is found that none of the tests showed albumen in .01 of 1 per cent. solution—that being the strength of mixture No. 5. The tungstate and iodo-mercuric tests showed albumen in solution of .02 of 1 per cent. The nitric acid and heat gave an undoubted test with .04 of 1 per cent. The picric and ferrocyanide were equally sensitive, showing albumen in no weaker solution than .08 per cent. by weight. Heller's test and the brine solution may be classed together, as the former gave an obscuring color-ring and the latter a suspicion of cloudiness in mixture No. 3, which had a strength of .08 of 1 per cent. This process was repeated with nine other specimens of albuminous urine, selected at random and containing varying amounts of albumen; care being taken to select samples whose specific gravity corresponded very nearly to that of the normal urine used. Two samples of hydrothorax fluid were also tested in the manner detailed above, except that for dilution distilled water was used instead of urine. The results of the twelve analyses were practically the same with all the reagents, except picric acid, which failed to give a reaction with two samples of urine showing a bulk of 3 per cent. by nitric acid and heat. By diluting with distilled water, a smaller portion of albumen was shown than when urine alone was tested. This is explained by the fact of absence of color in the former fluid, as a tint in the latter may have obscured the turbidity. The smallest proportion of albumen shown in any of the experiments was .00008 or one part in 12,500.

These figures do not agree with the statements of Dr. G. N. Stephen and Dr. Oliver in articles quoted above. Dr. Stephen says that the iodo-mercuric precipitates albumen from a solution of only one part in 20,000, and Dr. Oliver concludes: "As a result of many observations and experiments," that in his opinion one part of albumen may be discovered in 20,000 by the iodo-mercuric, picric and tungstate tests, in 10,000 to 12,000 by the ferrocyanide and brine tests, and in 6,000 to 7,000 by the heat and nitric acid.

Dr. C. W. Purdy[1] reports a number of experiments made with a view to establishing the relative values of the albumen tests. He concluded that the iodo-mercuric and tungstate reactions are the most sensitive, but makes no quantitative estimation of their value. In one of his experiments (that with blood serum) the amount of albumen is, however, easily estimated, as human blood-serum is known to contain 8 to 9 parts of proteids in 100.[2] Now, although Dr. Purdy agrees with Dr. Oliver in his deductions, yet in this experiment really only as strong a solution of albumen as one in 10,000 was detected. Dr. Purdy also found picric acid to be more delicate than nitric and heat. Dr. Geo. Johnson is similarly convinced. On the other hand, Dr. Tyson[3] says of

1 Journal of American Medical Association, January 19, 1884.
2 Hammersten, Foster's Physiology.
3 Prac. Exam. Urine, pp. 40.

the picric solution: "I have experimentally determined that the heat and nitric acid tests show smaller quantities of albumen than it does, while my friend, Dr. H. P. Bowditch, of Boston, has arrived at the same results, experimenting with carefully prepared solutions of egg albumen of known strength."

In my own experiments, the tests were applied to each dilution with great care and the eyesight of several persons called into play before a doubtful specimen was decided upon, and in these trials, picric acid never showed opacity by reason of albumen when nitric acid and heat failed. The iodo-mercuric and picric have, so far as I know, been conceded the first place in delicacy of reaction with albumen, but the measure of superiority in this direction is exceedingly fine. In my experiments these reagents showed albumen in only .02 of 1 per cent. more dilute solution than nitric and heat, so that practically the preference in the way of sensitiveness is nil, so far as regards these three tests.

*Accuracy.*—As each test depends for its reaction upon a precipitate, the questions naturally arise as to what are the substances other than albumen likely to give a precipitate with the reagents, and under what conditions is albumen likely to be retained in solution when the test is applied. 1. Picric acid, in acid solution, precipitates urates, vegetable alkaloids and peptone—all soluble upon heating for a longer or shorter time, as the case may be,—resins, as copaiba, turpentine, cubebs and others—soluble in alcohol. In alkaline or neutral it throws down the phosphates. If no vegetable acid be previously added, a precipitate of calcium phosphate is liable to appear upon heating, which redissolves when cooled. Dr. W. G. Smith[1] considers this to be due to "the disturbance by heat of the nice adjustment in proportion and basicity of phosphatic salts in urine." Whether this be the correct explanation or not, it is certain that in order to keep the phosphates in solution, a pronounced acid reaction is necessary. Tungstate and iodo-mercuric solutions are well known alkaloid reagents, and both precipitate peptone and resins. These precipitates in my experiments, were only soluble upon *prolonged* heating or in the case of resins and alkaloids upon standing with alcohol. I am not at all satisfied that the precipitate of peptone is completely soluble, some of it certainly disappeared when boiled. A saturated solution of uric acid at about 40° C. gave a precipitate with picric, tungstate and iodo-murcuric fluids. In normal solutions (.5 to .8 grains in 1500 cc.) no reaction was apparent. With three samples of urine showing a large amount of bile pigment by Heller's and Marechalt's pigment tests, and giving no reaction for albumen by nitric acid and heat or ferrocyanide of potassium, an abundant precipitate came down with tungstate and iodo-mercuric. This precipitate was neither alkaloid nor insoluble upon heating and in alcohol; moreover, picric acid gave no precipitate, which would indicate that it was not peptone. Resins, if present, should have been precipitated by picric and nitric acids. The microscope revealed nothing abnormal. Bile salts may have been present in sufficient quantity, as the specimens were destroyed without the application of Pettenkofer's list.

Prof. Bouchard, in the article previously referred to, says of the iodo-mercuric test: "1. An excess of iodide of potassium is necessary. 2. If mucin be present it falls as a precipitate, but more slowly than albumen. 3. Urates form a precipitate slowly, in the middle of the tube, not flocculent, which disappears upon heating. 4. In alkaline urine the double iodide test gives a precipitate which turns gray and then black. 5. Alkaloids precipitate, forming at the middle of the tube, redissolved upon heating or addition of alcohol." The albumen precipitate is supposed by him to form near the bottom of the tube. Dr. C. W. Purdy states that upon standing, even in acid solution, the mercuric-potassium compound liberates iodine, discoloring the solution. This would preclude the setting aside for the precipitate to settle. In experimenting to test the accuracy of these statements, I have not been able to verify the distinction between the location of albumen precipitate and that of alkaloids, urates or mucin. The cloud forms at the point of junction of the two liquids in any case, and if they be mixed, will be distributed accordingly. The difference in time between mucin and albumen coagulation was not distinguished.

Ferrocyanide of potassium is a preciptant of albumen, whereas the other reagents are said to coagulate it. This test is perhaps more accurate than any of the others considered, except the brine. It does not precipitate peptone, urates nor alkaloids; but it is decomposed by heat giving a precipitate of its own elements. The brine test is quite accurate with stronger solutions of albumen and a good confirmatory method in case of doubt, if the amount be large. Hemi-albumose is precipitated by this reagent.

Peptone is mentioned as a source of error with certain of the reagents. According to Foster (Physiology) the peptones are not precipitated by cupric sulphate or ferric chloride, but are thrown down by iodine, tannin, chlorine, mercuric chloride, mercuric nitrate, silver nitrate lead acetate and subacetate and *bile acids* in acid solution. They give a red color when mixed with caustic potash or a trace of cupric sulphate,—a large quantity of the latter causing a violet coloration. Hemi-albumose (Meissner's A Peptone) is precipitated by concentrated nitric acid and by potassium ferrocyanide in weak acetic acid; dissolves at 70° C. and falls upon cooling, and is also soluble in 10 per cent. sodic chloride solution.

There is great difference of opinion as to the frequency of peptonuria. Dr. Geo. Johnson[1] considers its occurrence rare. Fenomenow[2] says, "Peptonuria occurs in scarlet fever, exudative pleurisy, nephritis, puerperal diseases, disturbances of compensation in heart diseases, pulmonary phthisis, typhoid fever accompanied by constipation and a temperature above 40° C.; always occurs in the final stages of croupous pneumonia, and is in direct relation to the absorption of the croupous exudate. Frerichs, and

[1] British Medical Journal, July 14, 1883.

[1] British Med. Journal, Dec. 8, 1883.
[2] Deutsche Med. Zeitung, May 8, 1884.

very lately W. Fischel[1], find peptonuria of very frequent occurence in puerperal women. Dr. Bence Jones[2] found in the urine of persons suffering from osteomalacia, a substance not exactly defined by him, but which answers to the same tests as hemi-albumose or A-Peptone. I have found peptone in the urine of diabetis, and subsequently ascertained that the patient was taking pancreatine with his food; but whether this be a *post hoc* or a *propter hoc* I do not know. A method for the detection of peptone, given by Dr. N. A. Randolph[3], depends upon the fact that while nitrate of mercury added to cold aqueous solution of iodide of potash precipitates iodide of mercury; if peptone or bile salts be present, the precipitate of nascent mercuric iodide appears yellow.

Acetic is preferred to nitric acid by Tyson for the heat and acid test, under the belief that it less often fails to coagulate albumen, if present. Brown-Séquard[4] notes that after the addition of nitric acid and heat, no precipitation occurs in some cases, but that a second boiling always brings it down. In testing about sixty samples of suspected urine with both acetic and nitric acids, I found that the former never gave a precipitate when the latter failed; but, in a number of instances, acetic gave no test, when nitric showed abundance of albumen. With a sample of the fluid from hydrothorax acetic acid and boiling did not alter in the slightest the transparency of the fluid, but nitric acid, either cold or heated, filled the test-tube with a coagulum. This comparative test was repeated with hydrothorax fluid, and also with a sample of albuminous urine (showing casts in abundance by the microscope), using different proportions of acid varying from 1 to 30 per cent. No coagulum was formed by acetic acid, while nitric *never failed* in the whole number (twelve) of comparisons. Dilute nitric acid, when used in proportion of 5 to 15 per cent., the urine being afterward heated to boiling, has never failed in my hands to give a coagulum in albuminous urine; but, if added in too small an amount to neutralize an existing alkalinity, or, if used in excess, it may fail. The Heller test coagulates mucin (as do all the others, not excepting the brine and ferrocyanide), precipitates urates — soluble upon heating, throws down copaiba and other resins which would be dissolved in alcohol. It also precipitates hemi-albumose. Nitric acid and heat precipitate urates and resins, and coagulate mucin. The latter is easily differentiated by its appearance in shred-like or stringy masses, quite characteristic. Urates are dissolved upon heating and resins by alcohol. The latter show their presence by their odor always, and so should never be mistaken.

*Convenience and Cleanliness.*—The relative convenience and cleanliness of the tests under consideration must be, to a certain extent, a matter of individual opinion, for, as one accustoms himself to one method to the exclusion of others, its manipulation becomes more and more easy. However, to one who has not tried all of the reagents, their relative value in this connection will be a matter of importance. In this connection test papers may be alluded to, as their chief claim to notice is their convenience. The result of a fairly thorough trial with the papers has convinced me that they are cleanly, convenient, but unreliable, and of no use whatever in quantitative work; for—1. Floculent particles of the paper itself are apt to separate and obscure the test by simulating albumen 2. They are of uncertain strength; as, for instance, picric acid is never present in them in sufficient quantity for a positive reaction, and the iodo-mercuric deteriorates unless kept perfectly dry or away from atmospheric air. 3. Quantitatively they cannot be used; for, if the amount of albumen be large, so many papers must be added, as by their very bulk to obscure the test, or the urine must be diluted, adding to the manipulation; and, even then, complete coagulation can only be determined by a series of tests. Again, if the reagent be a coagulant, the solidified albumen is liable to form a dense coating immediately around the paper, thus preventing the escape by solution of all the reagent. Other objections might be mentioned, but these are the principal ones, and sufficient to condemn them as usually applied.

Picric acid requires the previous addition of a stronger vegetable acid to urine, besides heating. It stains the fingers and everything with which it comes in contact. Dr. Johnson says that these stains are removed by soap and water. They are, if a liberal supply of patience be included. Tungstate and iodo-mercuric fluids are cleanly and easily applied. They require the additional use of acid, however, besides heating. The iodo-mercuric must be kept in tightly-corked bottles. The precipitate of albumen by these subsides slowly, so that time is needed for estimation by bulk. The brine test is easily applied, but hardly convenient, on account of the quantity of fluid required, and is not used quantitatively. Ferrocyanide of potassium requires the addition of vegetable acids, and is slow in its action. Heller's test is applied by concentrated nitric acid, which is corrosive, and stains everything it touches. It is quick quantitatively, but requires some delicacy of manipulation for successful use. Nitric acid and heat may be applied with the dilute acid, thus obviating the stains and erosions pertaining to the strong: the coagulum is rapidly deposited, and hence the quantity quickly determined.

It is impossible to state absolutely the relative values of most of these methods until the questions of physiological albuminuria and of the importance of peptonuria are definitely answered. In the present state of our knowledge, however, I think it must be conceded:

1. That the dilute nitric acid and heat test is open to less weighty objections than any of the other tests herein considered, and that, properly applied, it has greater claims to superiority than any other so far investigated.

2. That the tungstate, iodo-mercuric and picric tests if applied, must be subjected to corrections requiring time and manipulation more than the older

[1] Archiv. für Gynækologie, Band 24.
[2] Annal. Chemie u. Pharm. Band 67.
[3] London Lancet, June 28, 1884.
[4] Archives, 1873.

acid and heat, and that they are less reliable—especially in the form of the test papers.

3. That the ferrocyanide and Heller tests are less perfect than the nitric acid and heat.

4. That the brine test is reliable, but not so valuable as the nitric and heat. The former may prove convenient to a country practitioner in case of emergency, as the materials for its application are at hand in every well-regulated kitchen. All that is needed is a sample of urine, a large spoon, a lamp, a pinch of salt and a few drops of vinegar.

The question of differential diagnosis of renal disease by the appearance of retractile or of homogeneous albumen upon testing the urine, was raised by Prof. Bouchard,[1] who claimed to have demonstrated the existence of two kinds of albumen in the urine, pathologically distinct; and also to have demonstrated their semeiological value. He found that upon heating albuminous urine, previously treated by different chemical reagents, sometimes the coagula collected in flocculi; leaving outside a limpid fluid, while at other times no such retraction took place, but the whole remained opague; and he believed that this fact distinguished between *renal* disease and the effects of others, and that the retractile form was only normal serum albumen transuded by pressure or by actual lesion of the kidney. Non-retractile albumen, on the other hand, was thought to be an abnormal albumen capable of dialyzing through normal renal epithelium.[2] Dr. Robet[3] declares that the difference is only caused by different reagents; retractile albumen appearing when acetic acid was added, and homogenous when alkalies had previously been used. He also states that the latter form is flocculent under the microscope. Albumen which showed the retractility in my experiments with nitric acid and heat did not retract, but remained homogeneous under the tungstate of sodium and iodo-mercuric tests, unless the citric acid (always used before these) was boiled with the urine before adding the reagent. Picric acid gave a retractile coagulum with all samples in which it was mixed. Ferrocyanide of potassium, of course, being a precipitant, gave no retractility. I tested samples of urine from albuminuria accompanying scarlatina and pregnancy, and never found a sample which gave a non-retractile clot with nitric acid. I do not know that the facts would warrant a conclusion, but it seems very probable that the tungstate and iodo-mercuric tests precipitate rather than coagulate albumen, and that a coagulum by acid and heat always retracts unless the character of the albumen be changed by the previous addition of an alkalo:—in other words, that the retractility is due more to the reagent employed than to the character of albumen tested.

II. SUGAR.—Of the newer tests for sugar in urine, the more important are, picric acid in alkaline solution and the indigo test. C. D. Braun[4] first called attention to picric acid with a caustic alkali, as a test for sugar in urine. The subject seems to have received no further attention, however, until in 1883 Dr. Geo. Johnson[1] brought the matter once more into prominence. The test depends upon the power of grape sugar to act as a reducing agent upon picric acid, resulting in the formation of picramic acid which has a deeper color, the value of the test depending upon the color change.

Dr. Johnson's method of application is as follows: 10 ♏ of a cold saturated solution of picric acid are added to a mixture of ℥iss of urine and ℥ss of caustic potash solution, the whole being boiled. Quantitatively 10 ♏ of the picric solution is reduced by ℥i of a solution of glucose gr. i to the fl℥i, in other words, one minim is equivalent to $^1/_{80}$ grain of sugar. The experimenter establishes a standard color by a solution of ferric acetate in excess of ferric chloride, and by diluting the fluid tested to a corresponding shade, calculates the quantity of sugar present by the relative quantities of urine and picric solution.

The sulph-indigotate of sodium is used by Dr. G. W. Oliver[2] as a test for glycosuria, and depends for its action upon the property—known and applied by sugar refiners more than thirty years ago—of indigo-carmine to become converted into indigo-white in the presence of certain organic matters. Indigotine (the coloring matter of ordinary commercial indigo) brought into contact with oxidizable vegetable material in the presence of alkalies, takes up hydrogen and is converted into indigo-white, which in its turn, under the influence of oxygen, is capable of reconversion into indigotine. Dr. Oliver uses the sulph-indigotate and the carbonate of sodium in the form of test-papers.

Dr. Pavy has lately called attention to quantitative determination of sugar by the ammoniated cupric test, in which instead of a precipitate a soluble oxide of ammonia is formed, and a decolorization of the fluid results, the extent of which determines the amount of oxidizable material in the liquid tested.[3] The fallacies of all these tests, as well as of Trommer's, Fehling's and the bismuth reactions, lie in the fact that they depend for reactions simply upon the presence in the suspected fluid of oxidizable organic material and not especially upon the presence of sugar. Thus, uric and hippuric acids, hypoxanthin, indican, ammonium chloride[4], urate and other compounds, creatin, creatinin, pepsin and peptones, all by their presence complicate the tests. With a view to determining the relative delicacy, accuracy and convenience of the reagents named, I tried each in turn with:

1. Solutions of varying per cent. of glucose in distilled water.
2. Graduated solutions of glucose in normal urine.
3. Normal urine alone.
4. Urine containing excess of indican.
5. Normal (.8 grm. in 1,500 cc.) solutions of uric acid in distilled water.

The following table represents the results obtained in each case.

[1] Soc. de Biologie, 1880.
[2] Dreyfus-Brissac, Gazette Hebdomidaire, 1881, page 326.
[3] Le Lyon Medical, April 23, 1882.
[4] Zeitschrift für Chemie, 1865.

[1] Brit. Med. Journ., Dec. 8, 1883.
[2] London Lancet, Aug., 1883
[3] London Lancet, March 1, 1884.
[4] Beale.

| | GRANULATED SOLUTION OF GLUCOSE. | MIXTURES OF GLUCOSE AND NORMAL URINE. | NORMAL URINE. | URINE WITH EXCESS OF INDICAN. | URIC ACID SOLUTION .8 IN 1500. |
|---|---|---|---|---|---|
| Picric Acid..... | *Reaction* manifest with .04 per cent. solution. | *Reaction* with 1 per cent. solution. | Reaction, varying from a trace up to 2 per cent, according to saccharimeter. | *Reaction* distinguished in 1-3 of samples examined. | Reaction definite, showing strength of 1 per cent. by saccharimeter. |
| Indigo Test.. .. | *Reaction* with solution of .04 per cent. strength. | *Reaction* with 1 per cent. solution. | *Reaction*, if any obscure, could not be determined. | *Reaction* not well determined. | *Reaction* well marked. |
| Fehling's Sol..... | *Reaction* with solution of .02 per cent. strength. | *Reaction* with 1 per cent. solution. | Reaction faint in 1-6 samples examined. | *Reaction* faint, ppt. came down on long standing. | Reaction showed about 1 per cent. |
| Trommer's Test.. | Same as Fehling's. | Same as Fehling's. | Same as Fehling's. | Reaction definite upon standing. | Same as Fehling's. |
| Dudley's Test (Bismtuh)... | Reaction with 2 per cent. solution. | Reaction with 5 per cent. solution. | Reaction not noticeable. | Reaction not noted. | Reaction faint but perceptible. |

Color tests are open to a serious objection on account of the fact of the prevalence of color blindness. About 4 per cent. of males are unable to distinguish red from green[1] and a far greater number cannot separate tints. Now, as these tests depend for accuracy upon an application of very delicate shades of a single color, it is obvious that they are useless to a great many. They require, furthermore, a great deal of manipulation. The picric acid is especially difficult to use and requires great practice for proficency in quantitative work. In high colored urines it is more difficult to detect a reaction than in pale. (The saccharimeter of ferric chloride and acetate is uncleanly of preparation, staining deeply wherever it touches, and a far better standard is made by mixing a few drops of ferric chloride with a solution of potassium sulphocyanide.) Albumen must be removed before applying the test, as the reagent is used up in combining with it,—turbidity obscures the tint and the combination may give a color of its own upon standing. The color of the solution tested is deepened by the presence of uric acid or indican. The sulph-indigotate is more easy of application, and in fairly strong solutions of glucose its reaction is very beautifully marked. There is, to a more marked degree in this test, the difficulty of telling how much of the change in color is due to the mixing of the two fluids,—one being of an amber or deeper tint, the other a blue—and how much to the chemical change, especially if the proportion of sugar present be small. The test is also obscured by indican and uric acid. The copper tests are open to the common objections already stated. They do not depend for their reaction upon a change of color altogether. They are not practically reduced by any of the organic substances named, except uric acid, peptone and indican.[2] They are the most easy and accurate quantitative tests known.

The bismuth tests are not of use in quantitative work, and are open to the common objections and require the removal of albumen. The ammoniated cupric test requires much manipulation and the ammonia is very apt to evaporate during the process, making another application necessary; besides this, the apparatus is cumbersome.

As to the detection of minute quantities of sugar in urine, the question arises, is the faint reaction noted with certain specimens of urine due to sugar, or some of these other organic matters? Again, does sugar in small quantities exist in urine? Dr. Johnson[1] believes that sugar exists in proportion of .5 to .9 gr. per f℥j. Dr. Alonzo Roquosi[2] states that he found sugar in the urine of hysterical persons, and Dr. R. Wagner[3] says that sugar in the urine of hysterical persons is an incontestible and proven fact. Dr. S. Waterman relates three cases of supposed diabetes with low specific gravity of urine (ranging from 1002 to 1007) in which Trommer's test threw down the sub-oxide only upon standing several days.[4] (None of these observers state the amount found.) Now, as hysterical urine, being of so low specific gravity, can only contain a small amount of solid matter, and as all the more delicate tests for sugar are liable to complication by other organic matter normally present—*e. g.* uric acid,—it cannot be considered proven that because a reaction is obtained sugar is present.

The following conclusions with regard to the sugar tests may, I think, be justified by the facts in the case:

1. In the present state of knowledge it cannot be considered proven that sugar does or does not exist normally in urine.

2. All of the tests for sugar in urine depending upon oxidizable organic material are hence liable to error, as all organic matter cannot be removed (leaving only the sugar) before the test is applied. Practically this source of embarrassment amounts to but little, for sugar when in quantity of over .2 of 1 per cent. is unmistakable by the Frehling test.

3. That the Fehling and Trommer tests are the most valuable reagents known for the detection of sugar in urine, the Fehling being the better of the

[1] Williams on the Eye.
[2] Thudichum, Patho'. of Urine.

[1] British Medical Journal, Dec. 8, 1884.
[2] Commun. Academy of Sciences, 1851.
[3] Royal Society Trans., Göttingen, March 15, 1852.
[4] N. Y. Medical Record, vol xxii, p. 729.

two, and best of all for quantitative work, as it requires a minimum amount of manipulation and is easily and accurately estimated.

4. Picric acid is very liable to error, especially quantitatively, being a color test. It requires a great deal of manipulation, is uncleanly, and in no way superior.

5. The indigo test is very liable to error, especially in high-colored urines, and very difficult to estimate accurately, as it requires considerable manipulation.

The 'Roberts' or fermentation test has not been considered, as it is uncleanly, does not show small proportions of sugar, and consumes a considerable time and trouble in application. It is, however, valuable over Fehling's in urine containing peptone, for here the copper tests are obscured greatly; though I have never been puzzled by this factor except in specimens of urine from one case of diabetes mellitus, cited above.

## LOCOMOTOR ATAXIA: ITS DIAGNOSIS AND TREATMENT IN THE PREATAXIC STAGE.[1]

BY D. R. BROWER, M.D.,
OF CHICAGO.

Locomotor Ataxia is the most frequent affection of the spinal cord. The preataxic stage, although easily recognized, is easily overlooked as the result of a hasty diagnosis. During this stage the disease is curable if appropriate treatment is instituted, otherwise the patient gradually drifts into the second or ataxic stage, when the derangement of the nervous system is so manifest that a mistake in the diagnosis is then hardly possible, for he falls into the hands of a specialist in diseases of the nervous system, only to be told that he is beyond the possibility of a cure.

The elements that enter into the diagnosis of the praetaxic stage, therefore, are of momentous importance, and are: *first*, sensory disturbances, as lightning pains; *second*, disturbances in patellar-tendon reflex; *third*, disturbances in pupillary reflex; *fourth*, disturbances in vesical reflex; *fifth*, disturbances in sexual condition; *sixth*, disturbances in gastric functions; *seventh*, disturbances in mental action; *eighth*, disturbances in muscular functions. The first three are the most valuable diagnostic points, as regards the sensory disturbances, such as pains of a peculiar character, spots of hyperæsthesia and anæsthesia in the lower extremities, that are sudden, severe and transitory, the former are like electric shocks, violent blows, stabbing with knives or burning with hot irons, compelling on the part of the strongest men violent outbursts of emotional disturbances. The pains are often localized in spots upon the surface that a silver dollar will cover; they may last a few hours and then disappear as suddenly as they came, returning usually in other spots after an absence of a few months or years. They are sometimes situated deeply in the soft tissues or bones of the extremities; at other times they are not localized, but present all the appearances of ordinary neuralgia, and again in other cases the pains are entirely absent.

[1] Read before the Chicago Medical Society, March 16, 1885.

*The condition of the reflexes* constitute the most valuable aids to diagnosis in this disease. The Patellar tendon reflex is diminished or lost; there may be exceptional cases in which the knee-jerk is normal, but the writer has never as yet observed this. In such cases the sclerosis must have commenced above the lumbar enlargement. This reflex is probably absent in two per cent. of healthy persons. We must, therefore, know that the person under examination once possessed a normal knee-jerk to enable us to draw any pathological significance from its absence, and the ordinary method of eliciting contracture of the quadriceps femoris by tapping the ligamentum patellæ when one knee is crossed on the other is not sufficient. The patient should be placed on a table, in the sitting posture, with the legs hanging over the edge. In this position the presence or absence of the knee-jerk is much more readily detected. The reflex being absent, the next question to establish is as to the integrity of the muscular structure of the quadriceps femoris, which can be determined with electricity and mechanical stimulation. If the muscle has a normal response to faradization, or responds by contraction to a tap over its surface, the muscle is healthy and the sign is diagnostic.

*The pupillary reflex* is diminished, or lost. The iris may contract equally, or one pupil is dilated or normal, and the other contracted; but the loss of reflex action to the stimulus of light, and the absence of dilatation of the pupil to stimulus applied to the surface of the neck, with this loss of reflex accompanied by a normal condition in efforts at accommodation, is the most striking symptom. The pupil will dilate in a strong effort at distant vision, and contract in a powerful effort at close vision. Another common ocular disturbance is, temporary double vision. This may last only a few hours, disappear, and return in a few months; or it may continue a few days and not again appear. Color blindness is also very frequent, the ability to distinguish red and green being first lost.

*The vesical reflex*, at the very beginning of the preataxic stage, is variable; usually the bladder is irritable, but this soon gives place to diminished reflex acuteness, and instead of a frequent desire to urinate, the patient slowly drifts into a condition quite the opposite, so that there may be no demand for the performance of this function oftener than twice in twenty-four hours. This condition is accompanied by diminished tone of the bladder walls, so that there is difficulty in commencing the act, and the stream, instead of being projected forcibly forward, falls abruptly, or simply dribbles, and the patient is often unable to determine when the act is finished, except using his eyes to determine it.

The *sexual condition* of the preataxic stage is, first, one of irritability, but is soon replaced by a diminution of all desire and capacity for intercourse, which may, in turn, be followed by nocturnal emissions.

*Gastric disturbance* in the preataxic stage is manifested by attacks of violent nausea, persistent vomiting and pain. The writer has a case under observation in which gastric trouble has been the only

prominent symptom for five years. The patient, during all this time, has been treated for a variety of gastric derangements. The attacks recur at intervals varying from a few weeks to a few months. The patient also has dilated pupils, loss of patellar-tendon reflex, and occasionally has attacks of lightning pains.

The *mental condition* is usually altered in the preataxic stage. The patient has fits of melancholy; he becomes morose and irritable, timid, and very emotional, and will shed tears on the least provocation. He loses, for a time, at least, his interest in business, and, to a certain extent, his usual ability in business transactions.

The *muscular system* in this stage is weak. There is no ataxia, but there is a sense of weight and weariness in the limbs, with difficulty in going upstairs. The condition is quite like that experienced in neurasthenia.

The foundation for the successful treatment of the pretaxic stage of this disease is *rest*—absolute, positive, and prolonged. The recumbent posture should be maintained for several months. This idea of rest in the treatment of locomotor ataxia is an innovation, but it is based upon the generally recognized scientific fact that a diseased organ should have its functional activity reduced to a minimum quantity; and this principle applies with as much force to the spinal cord as to any other organ. Rest, accompanied as it is by diminution of the nutrient activity of the nerve fibres, and by diminution in the calibre of the blood vessels, must be antagonistic to the pathological processes that have begun in the cord; but, as Weir Mitchell has taught in his treatment of hysteria, it is necessary to maintain the greatest activity of general nutrition, and to prevent muscular waste. The judicious use of massage and passive movements will often enable the ataxic patient to replenish the nervous system in the recumbent posture. The diet should be of the most nutritious character; cod-liver oil and the syrup of the hypophosphites are often of the greatest service. The condition of the emunctories should be constantly looked after. Electricity, in the form of the galvanic current of mild intensity, used after the method of general galvanization daily, is of service, and by its alterative and tonic properties will assist in modifying the pathological process. The spinal electrode should be large. The electric brush, with the faradic current to the back and lower extremities, will, by reflex action, assist in relieving the morbid condition, as well as in maintaining a more healthy condition of the parts during the treatment of rest.

Syphilis is probably the foundation of almost every case of locomotor ataxia; such, at least, seems to be the opinion of the majority of the best writers on this subject, as for example, Erb. In the experience of the writer, of the cases that have come under his observation, he is certain that the treatment of primary and secondary symptoms of syphilis was not sufficiently energetic or of sufficient duration; and there seems to be no doubt that the patients were thus predisposed to locomotor ataxia. To guard against the occurrence of locomotor ataxia after syphilis, mercury and iodide of potassium should be used boldly and for at least two years after the development of the primary sore; in this way it is possible that every germ of specific trouble may be removed from the system.

Should locomotor ataxia have already begun, antisyphilitic remedies should be used; mercury should be pushed to a point short of salivation, and the iodide of potassium given in drachm doses three times a day, or in larger doses if the patient can tolerate them. Iodide of sodium is often better tolerated, though it is not so efficient as the iodide of potassium. Effervescing Vichy salt is a desirable correction for these large doses of potash and mercury. In non-syphilitic cases, or in those which do not improve under anti-syphilitic treatment, nitrate of silver may be given with advantage in gr. ¼ or ½ doses, combined with some excipient that will not decompose it. It should be administered before meals. A factor in an unsuccessful use of nitrate of silver is the difficulty of getting it into the blood without decomposition. The writer has successfully used the hyposulphite of silver hypodermically; it is particularly satisfactory in being unirritating; he has given gr. jss daily until gr. xc had been administered.

Another drug of undoubted value is ergot, in fl℥j doses, three or four times a day. Cold baths, at a temperature of 65° to 70° Fah., are of service; but hot baths are very injurious, and should be avoided, as should the administration of strychnia. The writer has treated quite a number of cases by the plan mentioned above; some of these who were taken in the preataxic stage have recovered entirely; others have regained lost functions, except, perhaps, the patellar-tendon reflex; but they are so much relieved that they are able to resume their business.

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## MEDICAL PROGRESS.

### SURGERY.

CONTINUOUS TRACTION IN THE TREATMENT OF POTT'S DISEASE.—Dr. John F. Ridlon, of New York, referring to a recent article on this subject, by Dr. Buckminster Brown, in the *Boston Medical and Surgical Journal*, of July 3, 1884, reports the following case:

Patient, female; seven years old. Hereditary history, good. Four months ago her neck began to grow stiff, and soon head began to droop forward. No complaint of pain, and no crying at night noticed. The condition increased. The general health remained fairly good.

*Examination.*—The chin rests on the sternum, and at times is steadied by the hands. Voluntary movement of the head is impossible. Attempted passive movement in any direction elicits an anxious look but no complaint of pain; and the head is found to be held absolutely rigid by muscular spasm. There is a sharp angular kyphos at the third cervical vertebra. No evidence of abscess. The patient was put in bed on July 19, a Sayre's collar was applied, and from it a cord passing over a pulley at

the head of the bed, which was elevated, and a ten-pound weight attached. It was soon found that the patient would slide up in bed till the straps from the collar struck the pulley and released the traction. A harness was then arranged, of webbing around the waist and over the shoulders, and passing to the foot of the bed, where it was fastened. The appetite was good and the sleep normal. From this time case progressed favorably. The muscular spasm relaxed; the chin left the sternum and the kyphos diminished. By the end of six weeks, voluntary rotation and flexion were possible to a considerable degree when the patient was lying in bed.

By November 15, four months from the beginning of treatment, the deformity was entirely reduced, and motion free in all directions when the head was supported. When support was removed, however, the head drooped forward, and the patient caught the chin in her hands and complained of the motion. A support was then applied consisting of a modification of the H. G. Davis brace. The upright pieces of steel, instead of stopping opposite the lower borders of the axillæ, were carried up along each side of the spine, carefully molded to the surface, and up over the posterior surface of the head to the occiput. From here a strap was carried around the forehead, and another downward to form a chin support. The chin support was removed at meal times, and has recently been removed altogether. Up to the present time there has been no return of the deformity, and the possible voluntary motion has increased.—*The Medical Record, Feb. 7, 1885.*

The Use of Iodoform in Billroth's Clinic.—The Vienna correspondent of the New York *Medical Record* says: The preparations of iodoform in use in the service of Professor Billroth, are the following: 1, The powder, used in places where the gauze is impracticable, as in the pharynx, or in wounds of the soft or hard palate: 2, the gauze, of three kinds; the ordinary gauze for general dressing purposes, containing from 10 to 20 per cent. of iodoform; the iodoform gauze with colophonium, used about the mouth and where there is parenchymatous bleeding; and a third variety of gauze with tannin and iodoform, used where there is profuse bleeding, as in operations about the face and genitals; 3, an emulsion with glycerine, containing about 20 per cent. of iodoform, and used as an injection after the evacuation of pus in cold abscesses, in empyema, etc.; 4, iodoform with collodion, used in small superficial wounds, ulcers, etc.; 5, iodoform pencils, of different sizes, for insertion into sinuses, urethra, etc., containing about 75 per cent.; 6, iodoform vaseline, 20 to 40 per cent.

The powder is only used when the gauze cannot be, and not in large quantities. The gauze must come everywhere in contact with the fresh surface, if it is a wound whose edges are not brought together; over this first layer of gauze is heaped layer upon layer of the same material; over this absorbent cotton and the ordinary bandages. This dressing is always to be removed within the first twenty-four hours after the operation where there was much bleeding, or in operations of considerable size, and entirely new dressings applied in the same manner. This second dressing is not to be changed in from eight to fourteen days. This rule is especially insisted upon, particularly in wounds about the mouth. Repeated changing of the dressings, with the use of fresh gauze, is the chief cause of iodoform poisoning. In wounds which are to heal by granulation, very light compression is made. Before applying any dressing, the wound and the parts surrounding it are always thoroughly irrigated with a 1 per cent. solution of carbolic acid. With these precautions, in spite of what would seem to the American surgeon the immoderate use of iodoform, there has not been a single severe case of iodoform poisoning in Professor Billroth's service.

Hæmaturia due to the presence of a Leech in the Urethra.—Assistant-Surgeon Khazan Chand reports the case of a Mohammedan male who was admitted to the hospital on account of a sudden and enormous bleeding from the urethra, which the patient could not account for. The hæmorrhage continued for three days, notwithstanding gallic acid and ergot were given freely internally, and alum and nitrate of silver injections were used. At noon of the third day the head of a leech protruded through the meatus urinarius to the extent of a quarter of an inch. The head was seized and the leech drawn out. Bleeding stopped altogether, and the patient was allowed to return home in the evening. The patient was in the habit of bathing in a tank containing leeches in abundance.—*The Indian Medical Gazette*, January, 1885.

## MATERIA MEDICA AND THERAPEUTICS.

Keratin-Coated Pills.—Dr. Unna, of Hamburg, has discovered a coating for pills, which is likely to prove even more useful than it is ingenious. The task which he set himself was to find a coating which would resist the solvent action of the gastric juice, but would dissolve in the small intestine. This he has succeeded in doing by the use of keratin, a substance extracted from the shavings of ox or buffalo horn. The shavings are first digested by artificial gastric juice (pepsine solution with 1 per cent. hydrochloric acid), and are then macerated for weeks in ammonia. When the ammonia is driven off, a gummy solution of keratin is left, from which, by drying, keratin is obtained in the form of shining, bright, yellow flales.

A pill which is to be covered with keratin requires to be prepared in a special manner. The medicine employed is first rubbed well up with cocoa-butter or tallow, with the addition of some indifferent powder, if necessary, and pills are made. The pills are then covered with cocoa butter, so as to prevent any of the medicine from being on the surface of the pill. When the pill is hard it receives one, or, better, two or three coatings of solution of keratin. If the substance of which the pill is made renders solution in ammonia inconvenient, a solution in glacial acetic acid may be used. Keratin-coated pills are insoluble

in the gastric juice, but dissolve as soon as they enter the small intestine, and have, therefore, a special value in cases in which medicines which have an irritating effect on the mucous membrane of the stomach are to be administered for any length of time; for example, when arsenic, salicylic acid, kreosote, copaiva, cubebs, tartar-emetic, and vermifuge medicines are prescribed.

The method is further useful when medicines are given which are affected by digestion in the stomach, forming insoluble precipitates with pepsin and peptones; for example, tannin, alum, acetate of lead, subnitrate of bismuth, nitrate of silver, bichloride of mercury, etc.; and, further, in the case of medicines which it is desired should enter the intestine in as concentrated a form as possible, and medicines which are given with the view of affecting favorably diseased conditions of the mucous membrane of the stomach without exercising an irritating local action; for example, iron, quinine, arsenic in catarrh of the stomach arising from ammonia.—*British Medical Journal.*

THE POTENTIAL CAPACITY OF THE FEMALE BLADDER.—DR. W. E. GREEN relates the case of a woman, five months advanced in pregnancy, suffering from obstinate constipation, who retained her water for five days, from whom was drawn off by the catheter 180 fluid ounces of urine,—1 gallon, 1 quart, 1 pint and 4 ounces. On making a vaginal examination, there was found to be a retroversion of the gravid uterus, firmly impacted between the vagina and rectum, and causing obstruction to the neck of the bladder. She died a week later with cystitis.—*British Medical Journal.*

TRICHLORO-ACETIC ACID.—This is the name of a substance discovered by DR. FILIPPOWITCH, o Odessa, and possessing strong antiseptic properties. In a table showing the various strengths of the different antiseptic substances this new acid takes a high place; corrosive sublimate, carbolic acid, trichloroacetic acid, chloride of zinc, borax, permanganate of potassium, representing the order in which he has placed them. It is claimed for this acid that, in a solution of from 1 to 2 per cent., it destroys all organic life, while in a less concentrated form, from ½ to 1 per cent., though not affecting the development of yeast or mould, it yet completely arrests that of micrococci or bacteria. It is a crystalline body, easily soluble in water and alcohol, and of an agreeable odor. It coagulates albumen, and in concentrated solution it is a powerful caustic. The author claims to have brought about rapid cure in cases of foul and callous ulcers, and holds that the acid, so far from causing irritation, suppresses that where it exists. Against chancre, he believes it to be a remedy in no way inferior to iodoform. Internally, in gastric catarrh and cancer of the stomach, amelioration of the symptoms has been produced, while in the gastric enteric epidemics to which children are liable, complete cure has ever been obtained. It has been used internally also as a preventive of cholera, and, as a local application, successfully against thrush.—*Glasgow Medical Journal.*

## ANATOMY AND PHYSIOLOGY.

THE INFLUENCE OF SEX ON THE COEFFICIENT OF RESISTANCE AND ON THE FREQUENCY OF DENTAL CARIES.—DR. V. GALIPPE considers that, generally speaking, the density of the teeth in women is less than in men. It has long been recognized that pregnancy diminishes the density of the teeth, but Galippe considers that this aptitude for dental caries frequently coincides with puberty, and is accentuated by each succeeding pregnancy. The cause of this he attributes, in common with Landouzy, to the lowered degree of alkalinity of the fluids of the body. In this connection it is interesting to note the frequency of biliary lithiasis and of mitral stenosis, which seem to be closely connected with the genital life of the female.

This diminished amount of alkalinity in the female seems to have two factors, the one dynamic or functional, the other organic or anatomical. From the dynamic or functional point of view, the nutrition of the woman is retarded; from the anatomical or organic point of view, the blood of man contains more corpuscles than the blood of the woman; therefore, the fluids of the body in man are more alkaline than in woman. To satisfy himself on these points, and as having a direct bearing upon the teeth, Dr. Galippe made a large series of observations in hospitals upon the reactions of the saliva in pregnant and newly delivered women, and in nurses as well. The result was that the saliva was found to be acid in a majority of the cases. Another set of observations was between men and women in comparable conditions, where the saliva was less frequently alkaline in women than in men, and where it was frequently acid. When the alkalinity existed, it was often so feeble as to be totally inadequate for the saturation of the acids which form in the mouth. The elimination of carbonic acid is greater in man than in woman; it is nearly double at the period of puberty.

Dr. Galippe in one case observed the saliva become acid during menstruation, and accompanied by malaise. Besides these local phenomena, during menstruation the impulse of the heart is stronger, respiration is accelerated, and the amount of urea diminished. It is not to the frequent acidity of the saliva alone that this predisposition to dental caries is due. As has already been said, generally speaking the teeth of women have a density that is inferior to those of men; that is to say, they contain less mineral matter, and therefore their coefficient of density is inferior. Now, if we take the woman at the period of parturition we see how prejudicial this inferiority becomes.

The pregnant woman who does not receive, by means of a special alimentation, the elements necessary for the formation of the different tissues which constitute the fœtus, and particularly the osseous system, may sustain her first labor; but if these pregnancies be repeated without special care and alimentation, by drawing upon her own economy, her pericliteral economy, we see a series of disturbances occur, of which dental caries is the most marked.—*Gazette des Hôpitaux,*—Feb. 10, 1885.

THE

# Journal of American Medical Association.

PUBLISHED WEEKLY.

THE EDITOR of this JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information, should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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SATURDAY, APRIL 4, 1885.

## JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION—SUGGESTIONS FOR PUBLICATION.

Thus far the JOURNAL of the Association has been published on the plan of annual contracts with the lowest responsible bidders. The Board of Trustees has, prior to the annual meeting, obtained bids or estimates from several printing establishments in different cities, and awarded the contract for publishing the JOURNAL to the party offering the most favorable terms. While this plan is theoretically economical it is practically attended by many embarrassments and losses. The fact that the office of publication may be removed to another city at the end of the year, or the contract for printing be awarded to another firm in the same city, directly discourages many desirable permanent improvements. For instance, no book-binder desires to make up and keep on hand a supply of covers for each volume to be furnished to members and subscribers at a mere nominal price, while the plan of publication may be wholly changed in a few months. No publishing firm is quite willing to purchase and keep on hand type in Greek, Hebrew or other letter to be used, perhaps, not more than once or twice in the year, and no certainty that the contract will be renewed when the first year is out, unless they charge enough *extra* on some issue of the JOURNAL to cover the cost of such type. And the same rule applies to many items, small in themselves but in the aggregate exerting much influence on the completeness of such a publication. Again, contracts awarded on bids founded on certain specification, always leave many items that can be determined only by the exigencies of each issue. For instance, the setting of statistical tables, and the use of type for certain paragraphs different from what the contract calls for must be paid for extra. So, all matter kept in type from one week to another, whether composed of reading matter or of advertisements to be inserted only every second, third or fourth week, is subject to extra charge for *standing* type. And as a large proportion of advertisers in a weekly journal desire to have their advertisements appear only once in two, three or four weeks, the charge for *standing* type on all such, materially reduces the profits on the advertising. This can be only partially obviated by using stereotype plates, because each alteration in the text of the advertisement will require either a new plate or an alteration of the old one. Another very decided annoyance, inherent in the annual contract system, is the absence of all direct control or supervision, on the part of the responsible editor, over the parties engaged in doing the various items of work. The firm holding the contract may change their foreman on the average every ninety days, their proof-reader ditto, and half their folders and wrappers may be so heedless as to fold spoiled sheets or put wrappers on wrong side out on some copies of every issue, and the editor have no power to interfere while the contract lasts. The evils and annoyances we have enumerated are inherent in the annual bidding and contract system. They do not belong to Chicago alone, nor are they peculiar to the firm now printing the JOURNAL, but they would be encountered substantially the same in every city and in the hands of every printing company, under the same system of annual bids and contracts. This leads to the inquiry, whether there are any other methods of publication less objectionable, and if so, what are they? One other method which was suggested and discussed by the Board of Trustees at the beginning of its work, consists in the making of a more permanent contract with some well-known and responsible medical book publishing firm in Philadelphia or New York.

And there are now pending propositions, either directly or indirectly, from such firms in both the cities just named. But each of these propositions embraces conditions which practically and effectually remove the JOURNAL from the control of the Association or of its board of trustees, and invest it in the publishing firm for a series of years. And if, after it has served the purpose of conveying each week a knowledge of such publishing house and its publications to each member of the Association, the firm sees fit to return the mailing list to the Association

at the expiration of their contract of five or ten years, the latter will be obliged to begin anew, just as destitute of resources as when the first number was issued in July, 1883. We cannot believe that such propositions will find favor with any member of the Association or of the Board of Trustees who comprehends the nature and extent of the interests involved. If the object was simply to secure the publication of a good medical periodical, of which we have several excellent specimens already, the propositions might not be so objectionable. But it should be remembered that the important objects intended to be accomplished by the publication of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION are, first, the early publication of the proceedings, addresses, papers and reports of the Association from year to year; second, the constituting of a medium of frequent communication with the whole membership by which its constitution, by-laws, ethics, and action on the important topics of medical education, legislation and sanitation should become better known, and its influence for good rendered an hundredfold more potent, both in and out of the profession. To secure adequate attention to these special objects of paramount importance, the JOURNAL must be kept strictly under the control of the Board of Trustees appointed by the Association itself. And the time has now come when the business or publication interests of the JOURNAL should be settled upon a more permanent and definite basis than heretofore. First, the place of publication should be settled, at least for a term of years. Second, the editor in chief or business manager should be authorized to purchase all the type and form fixtures needed for the publication of the JOURNAL, and establish, with the aid of a thoroughly competent foreman, a printing or compositor's room where all the work of publication, except the press work, should be done subject to his own general supervision, and free from the constant interference of other work and other interests. We have now detailed and reliable estimates which show that such an office could be established in this city, carried on by reliable parties having experience in all the details of the same kind of work, and make the cost of publication of the JOURNAL nearly $1,000 less annually than it costs under the present contract. And the entire expense for type and outfit would not much exceed one-half of the amount thus saved during the first year.

The office and outfit once established, the amount now paid for stereotyping advertisements, for standing type, and extras for getting special letter type occasionally would keep the stock of type good, and the stock in hand would be steadily increasing, until at the end of ten or fifteen years, when the paying membership had reached 8,000 or 10,000, the needed presses could be added, and the American Association would have as good a publication capital, and as important a journal as our British brethren now have as their result of twenty years' labor and accretion. If the 3,000 and more members now receiving the JOURNAL pay their dues to the treasurer, the proceeds added to the receipts at the office of publication from subscriptions and advertisements will make a reliable income for the third year of publication of the JOURNAL of over $20,000. Allowing $12,000 as amply sufficient to pay the strictly publication expenses of the JOURNAL, and $6,000 for the whole editorial department, there would be left $2,000 for the current expenses of the association, without considering the important additions that are constantly taking place to the membership by application and the new members to be added at the meeting in New Orleans. We say again, therefore, that the time has come when the location and plans of publication should be more permanently settled. The $6,000 for the editorial department, more reasonably reliable for the future, would pay the assistant editor in Washington the same as heretofore, would pay from $2,000 to $2,500 to a competent literary editor, to give his whole time directly to the details of the editorial work, and leave from $2,300 to $3,000 to pay the business editor and the necessary correspondents. Thus managed, and with control of its own publication office and materials, the JOURNAL could be published efficiently and creditably, and its resources increase from year to year *pari passu* with the growth of the association and the great social and educational interests of the profession. We ask the serious attention of every member of the Association, and especially of every member of the Board of Trustees, to the foregoing considerations. If wisdom and moderation prevails in the councils at the coming meeting in New Orleans, the JOURNAL and the Association will both continue to prosper and to exert a benign influence over the whole profession for generations to come. But if the demands of a class of critics, who appear to think that a journal, in its first year, with the support of 2,500 patrons, should pay as large a corps of editors, and rival in quantity of matter and style of publication, a journal of twenty years' growth and a membership support of 12,000, be yielded to or adopted, the whole enterprise will be hopelessly swamped in debt before the end of the first twelve months.

## THE DANGERS OF CANNED GOODS.

The State Board of Health has another field wherein it may work to advantage. The following letter from a physician to the Chicago *Morning News* explains itself:

In view of the general belief, well or ill founded, of an early visit of cholera, it may not be amiss to indicate (apart from the deep dishonesty and rascality of the thing) one great danger and predisposing, if not certain, exciting cause. I mean spoiled canned goods. The danger is all the greater because it may be deftly concealed. When canned goods spoil, the gases of decomposition may be liberated in volume sufficient to cause the ends of the can to bulge outward. These facts are known and understood in canning establishments, and by simply making a hole in the cap the gases are withdrawn and the can again sealed. Hence two holes in the can may be accepted as proof that the contents of the can had spoiled, and should therefore be rejected as unfit for use. Unfortunately, these tests are no longer reliable. A few days ago, on examining the inside of a recently opened fruit can, the contents of which had caused illness, I noticed a hole had been made in the side of the can from without inward. It exactly resembled the hole in the cap. On removing the label the soldering was plainly visible, but while the label was entire it could not be felt on the outside, so carefully was it done. This hole in the side, so smoothly soldered and covered by the label, was used to pump out the gases of decomposition (for the contents had spoiled), and so allow the ends of the can to again fall into their original and proper level, as well as to remove all chance of rattling of the contents from pressure. Besides, there was only one hole in the cap. The only means which can afford the public proper protection against such heartless frauds are to compel the canner to stamp his name and the date of canning on the tin, and to forbid all wrappings or labels which might hide from view any part of the can. Meantime the Board of Health should keep a sharp lookout.

Cannot the State Board of Health and the Health Officers of the city make arrangements by which it will be disadvantageous to manufacturers to resort to these unwholesome methods?

## CARBOLIC ACID AND TYPHOID FEVER.

Such is the title of an article in the February, 1885, number of the *Archives Générales de Médecine*, by ALBERT ROBIN; an article valuable in that it shows that the administration of carbolic acid in certain infectious diseases, particularly typhoid fever, is worse than useless; and also showing the value of a knowledge of chemistry as applied to therapeutics.

If we analyze a large number of cases of typhoid fever treated by carbolic acid, it is found, says Robin, that the antithermic effect is the only one which really justifies its use. Even then the depression of temperature is only temporary, and to to maintain this it is necessary to prolong the action of the drug for a long time—ten to thirty days. But even the partisans of the carbolic acid treatment report: 1. Nervous symptoms, such as ataxic phenomena, convulsions, chills, trembling, etc.; 2. pulmonary complications; 3. colics, nausea and vomiting; 4. profuse non-critical sweats, which are useless or dangerous; 5. symptoms of profound intoxication, with retarded respiration, frequent, small, depressible pulse, cyanosis of the extremities, collapse and sudden death; 6. secondary chachectic symptoms. Though it would seem that these complications should be sufficient to make one hesitate in using the acid in these cases, its strongest partisans maintain that they are due more to the disease itself than to the remedy, and that the same complications are seen in cases treated by other methods. Here the discussion has rested for some time; but Robin believes that he has now shown conclusively that carbolic acid is detrimental to the organism in typhoid fever, at least.

His first proposition is, that "carbolic acid used in a continuous manner, and in large doses, exerts a disorganizing action on the chemical composition of the liquids and organic tissues, by destroying the elements of highest importance to the constitution." It is well known that carbolic acid is eliminated by the urine, and that its quantity is in direct relation with the amount of vegetable ingesta; that it is one of the products of the putrefaction of albuminoid matters, so that the degree of decomposition going on in the body of a person who is taking no vegetable diet may be ascertained by the amount of carbolic acid in the urine. Munk gives the daily quantity of phenol eliminated in a state of health, on an animal diet, as o gr .0011; Brieger gives it as much more o, gr .0150; Robin gives it, as the result of four experiments, as o gr .0079. But observations in five cases of typhoid fever, the patients being fed exclusively on an animal diet, showed that the mean was o gr .0304; from which it is easily seen that the production and elimination of carbolic acid in typhoid fever is far above that in the state of health. Whatever carbolic acid is excreted entails a parallel elimination of sulphur and potash; thus still further impoverishing the organism, since these substances are directly removed from it. Therefore, since in typhoid fever a double amount of carbolic acid is eliminated, the same proportion of sulphur and potash must also be lost; and as the patient cannot repair his losses, a daily deficiency results, which, if repeated for a long time, must be of very great disadvantage to the patient. This impoverishment is caused by a process natural to the disease, and should be included as a factor in the genesis of the troubles

of nutrition so frequently observed during convalescence.

These things being true, it is necessary to know what goes on in the organism when carbolic acid is administered internally. The oxidation of the acid is less active in typhoid fever than in a state of health, though it cannot be concluded from this that there is a diminished general oxidation in typhoid fever. Robin shows conclusively that the demineralization of the organism, by the removal of sulphur and potash, is one of the consequences of the typhoid state, and that it is considerably increased by the administration of carbolic acid. A calculation will show that the continuous administration of the acid will soon cause a loss of 23 per cent. of the total quantity of potash contained in the body; and the same calculation may be made as to the loss of sulphur—two of the most important mineral ingredients. How is the system affected by the loss of two of its principal histogenetic elements, the most indispensable to life? The animal deprived of its mineral salts is soon attacked with muscular feebleness and trembling; in the lower limbs this muscular feebleness takes the characters of a true paralysis, as though the cord were deprived of its functions. The mental faculties are affected and excitability is heightened; and death supervenes with convulsive movements, respiratory troubles and visceral steatosis. It certainly seems clear that any drug which may induce such results should be strictly proscribed in typhoid fever. Not only this, but all the organic compounds which are eliminated in the same manner as carbolic acid should also be proscribed. The following is an incomplete list of such compounds, most of which have been vaunted as antiseptics or antipyretics: Creasol, paracreasol, metacreasol, thymol, naphtol, pyrocatechine, resorcine, hydroquinone, methylhydroquinone, pyrogallol, tribromophenol, orthonitrophenol, vanilline, vanillic acid, benzol, naphtaline.

## GOOD REMEDIES OUT OF FASHION.

Such is the title of a most interesting paper by Dr. Charles J. Hare, delivered at the annual meeting of the Metropolitan Counties Branch of the British Medical Association in 1883. At first sight it would seem to a practitioner of "ye olden time" that in our race for new remedies, we are rapidly discarding those old friends which have been our sheet-anchor, helm, sail and all for many years; and that the physician of the present day thinks that the more new remedies he discovers the greater will be his reward. Undoubtedly many remedies, useful in past years, are now laid aside—a few have fallen into unmerited disuse—while others have been consigned to a merited oblivion. Still others have been clothed anew, disguised under other and new names and forms, and find an honored place in our therapeutic tables.

Dr. Hare seems to lament the disuse of not a few of the remedies which made the reputation of some and saved the lives of others of our ancestors. Among those which have found an unhonored grave he mentions opium, purgatives, venesection and dry cupping; leaving others to tell of the partial demise of tartarized antimony, blisters and gr. xv doses of calomel. If opium has fallen into partial disuse, it is only because morphine has taken its place, so much more efficient and powerful. That purgatives are less used than formerly, we much doubt. True, we do not administer ten grain doses of calomel in order to affect the biliary secretion, because we know that from one to five grains is a safer and more efficient dose. Nor, do we think that epsom salts has found the oblivion that Dr. Hare would have us believe? If there is a more efficient purgative than sulphate of magnesia, we have yet to find it; but it is not the only valuable purgative, nor is by any means the most pleasant. The most important part of the paper under consideration is the lament for venesection. Formerly, it is safe to say, at least twenty-five cases of severe illness in thirty were bled. Now, not one in, say three thousand, and that is far below the mark. There are still those, a diminishing few, who advocate its use, without restriction, in puerperal convulsions. How do their statistics compare with the rational treatment of the present day? The answer is so well known that it need not be given.

Of the almost forgotten remedies and therapeutic means in use fifty years ago, we may safely say that they are no longer used, because experience has taught us that there are other and better means of combating disease. Formerly pneumonic patients were bled. Did more or fewer recover then than under the present quinine and stimulant treatment?

## RAILROAD FACILITIES TO THE ASSOCIATION MEETING.

The passenger department of the Illinois Central Railroad Company has issued special notices that delegates to the Association, and their families and friends, who do not wish to return over this line, may purchase tickets at the company's office, 121 Randolph street, Chicago, to return over another route, either *via* Nashville, Louisville, Cincinnati or St. Louis, at $5 in excess of the round-trip rates over

this line; thus affording a magnificent journey, during the day, from New Orleans to Mobile along the Gulf coast, passing through Pascagoula, Ocean Springs, Biloxi, Pas Christian and Bay St. Louis,—all quaint old towns; then north to Montgomery, through the mountains of Alabama, to Decatur, Nashville, Mammoth Cave, etc. In view of the fact that accommodations at New Orleans have been somewhat meagre and expensive during the winter, a special agent of the Illinois Central Company leaves Chicago on April 4 for New Orleans, in order to secure accommodations at more reasonable rates. These will be announced subsequently.

## SOCIETY PROCEEDINGS.

### COLLEGE OF PHYSICIANS OF PHILADELPHIA.

*Stated Meeting, January 7, 1885.*

THE PRESIDENT, J. M. DA COSTA, M.D., IN THE CHAIR.

DR. WILLIAM PEPPER presented the specimens from and read the history of

#### A CASE OF ADDISON'S DISEASE.

H. P., 27 years of age, married, with a healthy family, was born and always lived in the mountains of Pennsylvania. He worked hard, and often, when in the woods hunting or lumbering with men stronger than himself, overtaxed his strength. On one occasion he hurt his back so badly as to lay him up for a week or so. He often wrenched his back in lifting heavy articles. He drank a little whisky, smoked a little, chewed to excess, and ate his meals rapidly, but for a man in his position his habits were good. He never had syphilis, and was never exposed to such depressing influences as worry and anxiety. There was no inherited family predisposition. He had the ordinary diseases of childhood, but was unusually well until the age of twelve years. At that time his stomach began to trouble him, and he noticed that indiscretions in diet caused dyspepsia, with its usual symptoms, which would disappear when the diet was regulated. As he grew older these symptoms of dyspepsia became more frequent and troublesome, and were often associated with spells of diarrhœa and colicky pains in the abdomen. Between the attacks the bowels were regular.

During the past six years his strength gradually failed, and for a year he had been unable to follow his accustomed vocation. For three or four years he had had a pain between the shoulders, which, however, was not very troublesome. During the past few months the dyspepsia had been almost constant, and more troublesome, and in addition there was a continual distress and pain across the stomach, running through to the back. There never were spells of vomiting with the dyspeptic symptoms, and during all this time the appetite was uniformly good. Two and a half years ago he noticed that his color was darker than usual. This he attributed to exposure to the sun, and during the following winter the discoloration grew less distinct, but it returned with the return of spring, and last winter, instead of growing less, the color became more intense.

Upon entering the wards of the Philadelphia Hospital, October 1, 1884, he thought that the color of the cheeks was lighter than it had been six months before. The general condition had failed no more since the appearance of the discoloration than it did before. The notes upon admission state that he was apparently a well-nourished man, with dark brown hair sprinkled with gray; the pupil of the right eye a trifle larger than that of the left (probably physiological). Last spring he came to the hospital to stay, but ran off in twelve hours, stating that he could not stand the place. His mental condition is good, and he sleeps well. After eating he has a feeling of fullness in the stomach, and has a dull pain across the pit of the stomach and through into the back. This is aggravated by the presence of food, and is sometimes sufficiently severe to keep him awake. There is no tenderness, no nausea or vomiting. The bowels are costive, and since being more careful in his habits he does not have spells of diarrhœa as frequently as formerly. He has great weakness and a feeling of excessive muscular debility, and any exertion produces breathlessness, palpitation of the heart, and complete prostration. There are occasionally attacks of palpitation and short breathing even without exertion. The whole surface of the body is darker than natural, the discoloration being most marked on the face, where it extends from a little under the roots of the hair down over the neck to the line of the collar, and on the back of the hands, extending to above the wrists, where the color is at least as dark as the complexion of a mulatto. It, however, has not the yellow tinge of the mulatto, but is more of a mahogany tint, as though stained with walnut-juice. It is not uniform, but is distributed in patches with little intervals of lighter-colored skin. It is not at all affected by pressure, and is not bounded by a sharp line of demarcation, but fades gradually into the surrounding skin. The lighter-colored skin is somewhat darker than the average. He states that the color deepens as the surface becomes cold. The finger-nails are of the ordinary tint, and contrast strongly with the dark fingers. The mucous membrane of the inside of the lips is darker than natural, and scattered over it are irregular, sharply-defined purplish patches.

An examination of the blood was made by Dr. William E. Hughes, to whom I owe this admirable history. The number of red globules was 5,130,000 to the cubic millimetre. There were 9,000 white corpuscles to the centimetre, or one to 560 red. The red globules were a trifle smaller and a little paler than normal, and some of them deeply pigmented. The white were normal in size, some containing pigment-granules, and some deeply pigmented. There were also some free pigment-granules. I must add that his temperature was normal, or even below normal, as a rule, though on one or two occasions there was a rise to 99½° or even 101° or 101½° for a few hours, apparently due to gastric irritation.

He was confined to bed. His diet was carefully regulated, and was varied from time to time to suit the failing powers of the stomach. For the most part it consisted of milk. Several applications of the actual cautery (Paquelin's) were made over the renal region posteriorly. Internally, he took aromatic spirits of ammonia, which proved an acceptable and useful stimulant to him. He lost strength steadily and quite rapidly, and from the date of admission, October 1, to the date of death, November 18, he lost twenty pounds,—from one hundred and twenty-four down to one hundred and four pounds. The pulse grew feeble and rapid. There were from time to time unaccountable sudden failures of appetite and digestive power. He was very lowspirited, and complaining constantly of distress and of inability to sleep quietly. Vomiting occurred occasionally during the last three weeks of his life. The pulse was barely perceptible at the wrist for two weeks before death. The discoloration grew somewhat darker toward the close. For the last forty-eight hours he was profoundly unconscious.

In the preliminary dissection the right supra-renal was found firmly attached to the under surface of liver and to the side of inferior cava. No special thickening about its outer surface, but there is a fine capsule of fat. On attempting to separate the kidney and supra-renal from the liver, firm fibrous union is found. The cardiac end of stomach is attached to the enlarged left supra-renal, and the spleen and tail of pancreas are closely united to it. Kidneys, suprarenals, spleen and retro-peritoneal tissue taken out together for dissection.

*Kidneys:* of average size; color good, except immediately beneath enlarged capsules, where the tissue is soft, and many of the tubes are fatty.

*Intestines:* cæcum and colon full of firm, hard scybala; ileum normal; Peyer's glands distinct; two inches from cæcum one long patch begins which measures six inches in length, and presents in a typical manner the shaven beard appearance; the solitary glands are a little swollen and prominent. Bladder is full of urine; the mesenteric glands not swollen; the mesentery is very fat. No swelling of ribs, clavicles, or any of bones noted.

*Spleen:* slightly enlarged; closely united to diaphragm and left supra-renal by old adhesions; pulp of medium consistency.

*Lymph-glands:* some of the lymph-glands of the abdomen, particularly those of the mesentery and retro-peritoneal, are swollen, grayish-red in color, and several of them contain grayish, translucent nodules, with opaque centres, looking like small tubercles; some as large as peas, and the centre distinctly caseous.

*Supra-renals:* the right is closely adherent to the kidney, diaphragm and inferior cava, and to the liver above. It is two and a half inches in length, one and three-quarter inches in vertical diameter, and rests upon the top of kidney, not descending into the hilus. It is exceedingly hard and firm, and on section shows a peripheral, dense, grayish-white, partially translucent tissue, and centrally three or four yellow, caseous masses, separated from each other by strands of fibrous tissue of almost cartilaginous hardness.

*Left capsule:* Is much larger; covers the top of kidney, and descends on its inner surface well into the hilus, measuring three and a quarter inches in length, two inches vertical, and two and a half inches in thickness. The lower end of the spleen is firmly united to it, and tail of pancreas is also attached to it. The splenic artery and vein run along its anterior surface in the thick, fibroid, fatty tissue, and at one point the calibre of these vessels is very materially reduced.

The mass is extraordinarily firm, cuts with the greatest resistance, and presents identical characters with the right, except that at the most anterior region there is a pocket of creamy looking pus, and at a central spot the caseous matter has undergone softening. At the most anterior part, close to the cœliac axis, the left semilunar ganglia is directly embedded in the fibrous tissue, and can be seen as a rounded grayish mass about one-quarter inch in diameter, and three small nerve-fibres can be seen passing from the ganglia in the dense tissue about it.

*Semilunar ganglia:* The splanchnics look normal, and can be traced directly into the semilunar ganglia; as the right passes on the crus there is a small ganglion developed upon it; it is free from all adhesion; the branches are readily dissected and look normal. The left semilunar ganglion is directly involved in the fibrous tissue of the suprarena, as stated above; the nerves of the left ganglion, as they pass out, are involved in the cicatricial tissue of the left suprarenal capsule, and cannot be dissected, but can be seen on section; several filaments can be traced to the branches of the cœliac axis.

At the concave margin between the two lunar ganglia there is a small dark-yellow body, probably a supernumerary adrenal. A bunch of normal-looking nerves passes from the right directly to the left semilunar ganglion. The branches passing to the right suprarenal can be traced in the fat and along the artery; they are neither numerous nor large.

*Miscroscopic Examination. Left semilunar ganglion:* Teased portions from the centre of it show innumerable ganglion-cells, most of which are very darkly granular, but the nuclei and in places the nerve-processes can be distinctly traced; nerve-fibres, medullated and non-medullated, are numerous, and in many places show remarkably slight change; in some cords the fibres are less distinct, fat-granules numerous, nuclei elongated, and the process of disintegration appears to be going on. In sections the ganglion-cells can be seen separated from each other by a considerable amount of nucleated tissue. In places they are still closely set together, but in others they are in a great part atrophied, and only one or two can be seen in the fibrous connective tissue, being recognized by the dark granular pigment. The section showed the nerve-fibres through the hard sclerotic tissue, and the chief change noticeable is a marked elongation of the nuclei, and, indeed, a multiplication of them.

*Right semilunar ganglion:* The cells are very readily issolated; the nuclei distinct, and in each instance

surrounded by tolerably dense, dark, pigment-granules; the nerve-fibres appearing normal.

Several portions of nerve-fibres passing out from the right semilunar ganglion were examined, none of which showed any special change; the cord of the thoracic sympathetic and the ganglia normal; the cells of the latter moderately pigmented.

*Marrow from rib:* It is dark-red in color, does not look fatty, and presents the characters of ordinary red marrow; many of the colorless cells are very granular and of average size; no great number of small ones; nucleated red blood-corpuscles tolerably abundant; no cells containing red blood-corpuscles.

*Marrow of vertebra:* Rather more fatty, of a deep, rich color, and differs further from the fact that it contains a number of cells containing red blood-corpuscles; in places these are extraordinarily numerous and large.

*Heart-muscle* of left ventricle in a state of brown atrophy; a few of the fibres present fat-granules throughout them.

*Spleen-pulp:* In addition to the ordinary elements there are also very humorous corpuscles containing red blood-corpuscles in all stages of degeneration.

It will be seen that this case was a very typical one of Addison's disease, both as to its clinical symptoms and as to the lesions present. The absence of anæmia is shown by careful examination of the blood, indicating that the main cause of the symptoms was to be sought in connection with the sympathetic nervous system; and the extensive and positive lesions carefully made out by Prof. Osler in this case fully confirm this view. Undoubtedly in many cases of Addison's disease the chief cause of the symptoms is to be found in such nervous implications and lesions; but in other instances it is clear that there is a progressive anæmia associated which must play a part in causing the symptoms. In cases where the exudation in the capsules undergoes cheesy degeneration with absorption of the disintegrating organic materials, it is not improbable that there may also be an element of sepsis which would aid in inducing cachexia, even if it did not lead to tuberculosis, which, as is well known, not rarely appears in the late stage of Addison's disease.

The frequent allusion to severe strains or injury of the back in the history of this case suggests the possible origin of the disease of the capsule from repeated irritations caused by violent muscular strain or by sudden shocks to the frame. It will be noted that in a considerable proportion of cases this disease has arisen in subjects liable to such causes as the above.

Dr. Frederick P. Henry remarked that this was undoubtedly a genuine case of Addison's disease, and remarkably free from the frequent complications of that affection. The rarity of Addison's disease in this country may be judged of by the fact that in the eleven volumes of the Transactions of the Pathological Society of Philadelphia there are reports of only two cases, and these were made by Dr. Henry, in whose practice they occurred. They are to be found in Vols. V. and X. The specimens from one of the cases are now in the museum of the Episcopal Hospital. Dr. Hughes' report upon the condition of the blood in this case is very interesting. Most writers upon Addison's disease are accustomed to attribute the profound adynamia so characteristic of the affection to a high degree of general anæmia, in spite of the absence of any facts to support such a theory. This adynamia is due to an insufficient supply of blood, although of good quality, to the supra-diaphragmatic portion of the body, the result of an accumulation of blood in the abdominal blood-vessels caused by vaso-motor paralysis. Free pigment in the blood has only been once before observed, so far as the speaker is aware, by Van den Corput (*Gaz. Hébdomadaire*, 24 Juillet, 1863). The changes observed in the sympathetic ganglia are of undoubted interest, but it must not be forgotten that typical cases of Addison's diseases have been observed without perceptible lesion of these ganglia. Eulenberg and Guttmann (*Journal of Mental Science*, January, 1879) have collected twenty cases in which changes were found in the nerves of the supra-renal plexus and the ganglia of the solar plexus, opposed to which they place twelve cases in which careful examination demonstrated no change whatever. The positive observations included fatty degeneration (found by Queckett in one of Addison's original cases), swelling and redness of the nerves of the lesser splanchnic and ganglia of the solar plexus, atrophy, pigmentation of the ganglionic cells, increase of connective tissue in the ganglia and in the neurilemma of the nerve-fibres, and caseation of the semilunar ganglia.

Primary affections of the abdominal sympathetic has been appealed to as a cause of numerous other affections, notably of Bright's disease, by Drs. Da Costa and Longstreth, on the basis of careful microscopic examination of the ganglia in nine cases (*Am. Jour. Med. Sci.*, July, 1880). The accuracy of their description of the condition of the ganglia has been confirmed by Dr. Robert Saundby (*Brit. Med. Jour.*, January 13, 1883), whose observation has been still more extensive (fifteen cases), but he entirely dissents from their conclusion as to the primary nature of the sympathetic affection, and points out that similar changes have been found in the ganglia in diffuse eczema, pseudo-hypertrophic muscular paralysis, pernicious anæmia, glio-sarcoma of the brain, general paralysis of the insane, cholera, and diabetes. He points out in conclusion that Giobanni (*Patologia di Simpatina*, Milan, 1876) "found cellular infiltration of the sympathetic ganglia in an immense variety of visceral and general diseases, showing that structural changes in the organs are very generally accompanied by signs of irritation in the ganglia."

It is not necessary, however, that there should be a destructive lesion of the solar plexus and semilunar ganglia in order to produce vaso-motor paralysis of the abdominal vessels. Irritation of a sensory nerve produces vaso-motor paralysis in the irritated region, and the well-known experiments of Goltz (*Kopfversuch*) have shown that irritation of the intestines produces complete vaso-motor paralysis of their blood-vessels, causing thereby so great an accumulation of blood that the animal shows symptoms of syncope, the same as if it had been bled copiously. In Addi-

son's disease, from the beginning of the morbid deposit in the medullary substance of the supra-renal cansule, an irritation is transmitted to the semilunar ganglia and solar plexus, by which means a vasomotor paralysis of the abdominal vessels is produced, as in the experiments of Goltz. This constant hyperæmia leads to enlargement of the glands of Brunner, the solitary glands, and Peyer's patches, so constantly met with, and, when more intense, to catarrh and ulceration of the intestinal mucous membrane. It also accounts for the dark color of the liver, spleen, kidneys, and pancreas so often observed, as well as for the brown color of the peritoneum sometimes noted, notably in a case of Severini. Indirectly it explains the anæmic and dry condition of other parts of the body, and fully accounts for the symptoms of muscular weakness, syncope, and gastro-intestinal disturbance,

In the case under discussion no mention is made of the size of the heart, which is noted as being small in numerous autopsies and the seat of fatty degeneration in several. On account of the abdominal hyperæmia, the quantity of blood reaching the heart at each diastole is less than under normal circumstances, and thus the invariable weakness, smallness and softness of the pulse are explained. The heart is never normally distended, and thus its cavity becomes permanently diminished. On account of these heart changes the abnormal distribution of the blood due to the abdominal hyperæmia is still further facilitated. Anæmia of the central nervous organs explains the dizziness, tendency to somnolence, lassitude, and lowness of spirits so often observed; also attacks of prolonged prostration and loss of consciousness, with convulsions; sometimes a condition of collapse that has been compared by Wilks to that of cholera. All the nervous symptoms of Addison's disease are not, however, to be explained by the theory of cerebral anæmia: such, for example, as restlessness, sleeplessness, psychical disturbances, clonic spasms in various muscle groups, and sensory and motor paralyses. In such cases there is probably irritation of a cerebro-spinal vasomotor centre, causing local hyperæmias of the central nervous organs. There are two paths by which such a reflex action may travel: 1, through the cœliac axis and its connection with the medulla spinalis; 2, through the branches of the phrenic and pneumogastric distributed to the supra-renal capsules; and the degree of this irritability probably varies in each individual.

In connection with the abnormal deposit in the skin in Addison's disease, certain observations of Thudichum are of great interest. For sixty-five consecutive days he examined the urine of a patient of Dr. Burdon Sanderson. Without complicating fever or diarrhœa, there was a great diminution in the daily amount of urine excreted: the sp. gr. was 1020 and upward, and the reaction acid. The observations were chiefly directed toward the determination of the percentage of uromelanin, omicholin, and uropitin, three products of decomposition of urine-pigment, of which the first is the most important. It has almost the same chemical composition as the melanin of the choroid and of the melanotic tumors, and, like the pigment in the skin, is iron-free. Thudichum found these pigments greatly reduced in amount, the uromelanin never rising above one-twelfth the normal. The speaker has been unable to find any record of a spectroscopic examination of the pigment deposited in the skin in Addison's disease, and would suggest the importance of such examination being made. There is an iron-free product of decomposition of hæmoglobin, namely, hæmatoporphyrin, which is iron-free hæmatin, the absorption-bands of which are figured in Hermann's "Handbuch der Physiologie," Band IV, Theil I. It would be interesting to compare the absorption-bands of these two iron-free pigments, both of which have their origin in the coloring-matter of the blood. It is evident that the diminution in the amount of urine-pigment may be in relation to the excess of pigment in the skin. The observations of Thudichum await further confirmation.

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## CHICAGO MEDICAL SOCIETY.

*Stated Meeting, March* 16, 1885.

VICE-PRESIDENT, C. T. FENN, M.D., in the Chair.

DR. D. R. BROWER read a paper on

LOCOMOTOR ATAXIA; ITS DIAGNOSIS AND TREATMENT IN THE PREATAXIC STAGE.

[See page 373.]

DR. H. GRADLE inquired whether the preataxic stage may not be another disease from true locomotor ataxia, or whether the symptoms may not really be due to a separate disease. He referred to the case in which Langenbuch (he believed), in 1875 or 1876, stretched the sciatic nerve, the result being a cure of the patient. This patient subsequently died of some other disease, and the autopsy showed that the posterior root-zones were perfectly healthy.

DR. G. C. PAOLI stated that but few cases of stretching the sciatic nerve for any form of difficulty resulted in recovery or benefit to the patient. As regarded syphilis being the most frequent cause of the disease, his own experience led him to think that it was not. Duchenne has said that masturbation is the cause of the greatest number of cases, and he was the first writer to announce this. The speaker said that from his own observation he believed this to be true; when, for example, a person commences this practice in youth, and continues it for a long time, he is liable to be stricken with the disease. The first symptoms that he had noticed were exhaustion of the nervous system, muscular fatigue, and scarcely any pain. No doubt syphilis is a cause of the disease when the patient has not received proper treatment; the improper use of mercury may cause it. It occurs in the lowest classes of society, among those who live in damp, ill-ventilated apartments. To give iron freely in this disease will produce intestinal derangement; it may, however, be given in small doses with iodide of potassium, and the methods suggested by the reader of the paper might be followed with advantage.

Dr. Robert Tilley thought the subject of the preataxic stage a very important one; it may extend over a period of thirty years, and it is therefore difficult to determine whether it is a separate disease or not. So far as the literature of the subject is concerned, he thinks that syphilis is by far the most frequently mentioned cause. One symptom of the preataxic stage, which was not mentioned by the author of the paper, is the difficulty experienced by the patient in walking backward. In the case of a lady who had come under his care, and who had incipient locomotor ataxia, when she stooped forward she was obliged to keep her eyes open; she could not stand still or erect with the eyes shut. Regarding the inability to distinguish colors (green or red) in the early stage, this does occur. He could corroborate the statement that hot baths are very injurious; the same is true of the Turkish bath; a patient will sometimes lose consciousness while in the hot room where the bath is being taken. He could not think that the disease is ever caused by a too free use of mercury.

Dr. Brower said that he had never seen a report of Langenbuch's case, referred to by Dr. Gradle, but he had heard it spoken of by others; whether it was a case of true locomotor ataxia he was not prepared to say; and if so, whether there was perfect regeneration of the posterior root-zones. Where there are marked reflexes, degeneration of the root-zones will follow, and it is not in accordance with our ideas of pathology to believe that a degenerated portion of the cord may regenerate. There is a great deal of uncertainty as to the pathology of the disease; some regarding it as a neuritis, others as of cerebral origin. He looks upon it as a sclerosis of the posterior root-zones. He could not agree with Dr. Paoli that masturbation may cause locomotor ataxia or any organic disease, though it may cause functional troubles. As to the phenomena and difficulties which a patient experiences in walking backward, he thinks these rather exceptional; he has had patients who could walk backward or stand with the eyes closed with perfect equilibrium. He closed by saying that he had hoped to hear some discussion on the principal point in his paper, the treatment by long continued rest, either in the dorsal or lateral decubitus.

Dr. E. F. Ingals read a paper entitled

## PARACENTESIS AND DRAINAGE IN THE TREATMENT OF EMPYEMA.

After referring to the various methods of operating, with the aspirator, free incision and sudden evacuation of pus, the exsection of one or more ribs, etc., he stated that a large ratio of fatal cases, in which the radical operation had been performed, is due to the operation itself in some of its forms. This, however, should not be taken as an argument against any operation whatever being performed, for recent statistics show that a much larger percentage of patients recover under operations than when left to themselves. A good result will more frequently follow the operation which will empty the cavity slowly, and at will, and at the same time keep the cavity thoroughly disinfected. Aspiration will not meet these requirements completely in many cases, and it is therefore necessary to perform a radical operation so that free drainage may be obtained; but the radical operation is best preceded by aspiration, withdrawing the pus several times if necessary, in order that the lung may expand and the chest walls contract to such an extent that all the fluid may be removed at one time, without causing the distressing sense of compression of the chest and suffocation. When this has been done the operator should wait a few days, in order that the cavity may partially refill; the operation for permanent drainage should then be done.

To secure proper drainage and prevent the loss of the drainage tubes in the pleural cavity, the tubes should be prepared as follows: A piece of the best rubber tubing, two feet long and nearly a quarter of an inch in diameter, with a calibre of an eighth of an inch, should be selected. This is cut half through near its middle, so that when folded the two pieces are fastened together at a point about one and a half inch from the cut place, with a silk suture; this is tied on the inside of the perforated tube, and keeps the two pieces in the same relation to each other, and thus prevents one of the annoyances incident to the use of tubes which are not thus fastened. One portion of the tube should be perforated about half an inch from the cut, the other portion in several places, extending from near the cut for three or four inches along that portion which is to hang within the chest. As a matter of convenience the outer ends of the tube are tied tightly, so that pus will not escape through them while they are being introduced. The tubes should be carefully measured, so that it may be known afterward just how far they extend into the cavity. The difference in the length of the ends of the tube enables the operator to know which is the perforated portion, a matter of importance in the subsequent treatment.

Immediately before the operation an aspirator needle or a hypodermic syringe may be used, so as to avoid making an opening where adhesions have bound the pleural surfaces together, and to ensure that the cavity is entered. An incision about one-fourth of an inch long should be made through the skin, through which a broad flat trocar is plunged into the pleural cavity; this makes an opening sufficiently large to allow the easy passage of the two drainage tubes, which should be introduced as quickly as possible after the canula is withdrawn. By introducing the tubes quickly and carefully the entrance of air is prevented, and the tissues will contract closely about the tubes. A piece of sheet rubber, about three inches square and with two small openings near the centre, is then slipped over the tubes down to the chest wall, where it will act as a valve to prevent the entrance of air in case the tubes should become loosened. In addition to these precautions, to secure the tubes perfectly, a section of the same tubing, half an inch long, through which have been tied two loops of strong cord, is slipped over each piece of drainage tube by the aid of the canula; this is carried down close to the chest wall, and fits the tube so closely

that slipping is impossible. Long strips of adhesive plaster are then passed through the loops and around the chest, the tubes being thus placed perfectly under control; over the whole is placed a bandage, between the folds of which hang the drainage tubes, which are then opened after long pieces of glass tubing have been attached to them. The pleural sac is washed out with a 2 per cent. solution of carbolic acid at 101° Fah., first through one tube, then through the other, until the cavity is clear of pus; after this procedure the ends of the tubes are folded upon themselves and tied, so that they are hermetically sealed. The subsequent clearings should be made two or three times a day. After two or three days the physician need not call oftener than twice a week in order to satisfy himself of the necessity of any change in the injection for the purpose of securing perfect obliteration of the sac; the washing out of the cavity may be done meanwhile by the friends of the patient.

About two weeks after the operation one of the tubes may be left open, connected with a long rubber tube which itself opens into a bottle which the patient carries in his pocket. In old cases of empyema, in addition to the above described method, resection of one or two ribs may be necessary in order to cause complete closure of the cavity; but the patient's chances for recovery are greatly enhanced by adopting the first method. It may be said in conclusion that this method possesses the following advantages:

1st. It may be quickly and easily performed without an anæsthetic.

2d. It enables us partially or completely to empty the chest, being governed by the effect it produces upon the patient.

3d. It is free from one great risk incident to free incision into the chest, viz.: as a result of the sudden evacuation of pus and the free entrance of air, as many patients die from the operation within a few hours.

4th. Air may be excluded from the cavity for several days if care is used, or at most but a few bubbles may enter if the tubes are opened under water.

5th. The drainage tubes are securely held and cannot slip into the chest.

6th. The opening is closed so snugly as to almost wholly prevent the discharge of pus except through the tubes, thus enhancing the comfort of the patient.

7th. As a nurse may readily cleanse the pleural cavity, the subsequent treatment is rendered much simpler and easier than where a free opening has been made.

8th. In chronic cases where resection of a rib or of portions of several ribs may be necessary, this is the best possible preparation of the patient for that operation.

9th. Eighty per cent. of the patients operated on in this manner will recover.

DR. JAMES E. TAYLOR, of New York, being invited to participate in the discussion, related a case to which he had been called in consultation some two years ago. The patient was cyanosed, and had all the symptoms of empyema. As but one method for his relief seemed to offer itself, a trocar was plunged into the pleural sac and four quarts (about) of pus were evacuated. The patient did well, and in a few days was able to take a journey of some three or four hundred miles. The operation was repeated in about ten days, and the patient ultimately recovered entirely. He believed that the loss of a drainage tube in the pleural cavity was usually the result of want of care on the part of the operator, and an accident of very great gravity.

DR. ROBERT TILLEY referred to the jacket arrangement; the lacing on of a jacket after the operation for the purpose of compressing and supporting the chest walls.

DR. H. J. REYNOLDS wished to know between which ribs Dr. Ingalls thought it best to operate?

DR. INGALS thought that lacing has the same effect or is analogous to tightening a bandage on the abdomen; but that a plaster jacket is obviously unsuited for making continuous pressure on the constantly moving chest wall. He thought it best, as a rule, to operate between the sixth and seventh or the seventh and eighth ribs; but the opening should be made high up on the chest.

DR. C. G. DAVIS then read a paper on

### HYPNOTISM.

Many functional disturbances of the nervous system have long been sources of mystery. A peculiar condition of the nervous system, known and designated by various writers as mesmerism, electrobiology, clairvoyance, animal magnetism, odylic or odic force, hypnotism, etc., has, as far back as the history of mankind extends, attracted the attention of the scientific, and excited the wonder of the seekers after the mysterious and supernatural.

The reader then reviewed the customs in olden times, when it was claimed individuals cured diseases by this mysterious power. He said pretenders have arisen from time to time who have used the phenomena for deception and for mercenary motives. After alluding to the theory of animal magnetism, and classifying Mesmer as a charlatan, Dr. Davis asks:

Now, what is magnetism? Much has been said and written on this subject. At one time the popular tide of belief in its reality has run high, and again the waves of scepticism have swept over it, and for a period almost hid it from view. But today we may consider it as having been tested in the scientific crucible, thoroughly established, and well worthy the attention of the medical profession. The subject may be considered a piece of mechanism of peculiar construction, capable of certain unusual conditions and movements, which only await the bidding of the operator to be set in motion. Hypnotism in many respects resembles somnambulism. I have observed that the somnambulist has usually yielded most readily to an effort to produce the hypnotic condition. In both somnambulism and hypnotism we find the individual performing what we may term unconscious cerebration. There is to a certain degree, undoubtedly, a temporary suspension of the controlling, inhabiting power of the cortex. Whether this disturbance of the normal equilibrium between the various

encephalic centres is purely dynamic in its character, vaso-motor, or partially both, is not yet fully determined. However, as it is almost impossible to conceive of any organ of the body engaged in its functional activity without an increased supply of the blood, I am inclined to believe that the vaso-motor condition plays an important part. How may hypnotism be produced? It is an admitted fact that all persons are not equally liable to the hypnotic condition. With a sensitive subject, a prolonged stimulation of any sensory nerve in close proximity to the brain, together with a concentration of the attention on one idea, is usually sufficient to bring about the condition within a few minutes. By the prolonged stimulation of the sensory ganglion some portion of the cerebral hemispheres becomes, as we suppose, exhausted, possibly anæmic. We shall be better able to describe this condition when our physiologists are more prepared to answer the question, "What is inhibition?"

From observation and experiments we arrive at the conclusion that hypnotism is a fact; an unusual physiological condition brought on by a perverted action of certain parts of the encephalic centers. It affords a rich field for investigation, and in the hands of skillful men so powerful a method of influencing the nervous system should certainly be utilized for remedying disease. The German physicians, as is the case in many other avenues of medical thought, have probably done more than all the rest of the medical world in establishing hypnotism as a therapeutic remedy. Dr. Berger, of Jena, has reported a number of cases of spasmodic trouble and of hystericamania relieved by putting the patient into the hypnotic sleep. Dr. L. E. Fisher also reported similar cases in 1883. Dr. Creutzfeldt, assistant to Professor Preyer, reported cases cured in the same manner. The statement had occasionally been made that only individuals possessing diseased nervous systems were capable of entering the hypnotic state. This I do not believe; I am, however, more inclined to the opinion that every living being is to a certain extent capable of being hypnotized, there being of course a wide difference as to susceptibility.

M. Brimond has recently made a large number of experiments on soldiers and sailors from 14 to 26 years of age, and proven positively that the phenomena of lethargy, catalepsy, and somnambulism may be periodical in healthy non-hysterical people. (*Med. Record*, March 22, 1883.) We know also that by the prolonged stimulation of some sensory nerve we are capable of producing a condition similar to hypodism in many of the lower animals. This I have often produced when a boy for my own amusement in chickens, dogs, cats, etc. By means of the sphygmograph, the myograph, and the pneumograph hypnotism is proven. It stands out as a scientific fact, and is full of rich resources through which we may study more closely the psycology and physiology of the human brain. Every year finds the scientific world in possession of new facts illustrating the wonderful influence which the mind has over the body.

After reading his paper, Dr. Davis introduced three subjects in illustration of the cataleptic, somnambulistic and lethargic symptoms of mesmerism. In each case the pulse was found to be considerably accelerated within a very short time after the patient had entered the state. The cataleptic limbs were perfectly rigid, remaining in the position in which the operator placed them; they could be moved but little, and invariably recoiled to that position when the force brought to bear in moving them was expended. It was thought by some that there was a material difference between the subject in hand and the others. While under the mesmeric influence, they obeyed every command of the operator.

Drs. G. C. Paoli and W. E. Clark stated that they had no faith whatever in such exhibitions.

Drs. Moyer, Angear, J. H. Etheridge, Tagert and Reynolds spoke rather hesitatingly on the subject, and were convinced that the subjects were not "professionals;" from their knowledge of Dr. Davis, and of his sincerity and candor, and they were certain that he would not knowingly exhibit actors in illustrating his experiments.

Dr. Davis, in closing the discussion, said that hypnotism contains the germ of scientific truth, and that any one who asserts that there is nothing in it only shows that he has not studied the literature of the subject. He did not claim to account for the hypnotic phenomena, but would again assert that it is pure science. [The Secretary, Dr. Liston H. Montgomery, has taken pains to seek out one of Dr. Davis' subjects since the meeting of the Society. He stated that he had never been hypnotized before, and that he was willing to make oath to this effect before a notary public.—Editor.]

## FOREIGN CORRESPONDENCE.

### PARIS LETTER.

(FROM OUR OWN CORRESPONDENT.)

*The Physiological Action of the Sulphate of Cinchonamine—A New Method of Treating Intestinal Obstruction—A New Clinical Thermometer.*

Professor Vulpian lately communicated a note to the Academy of Sciences, in the names of Professor Germain Sée and Dr. Bochefontaine, who had made a series of experiments to determine the physiological action of the sulphate of cinchonamine; the following are the conclusions arrived at by these gentlemen: Cinchonamine appears to have a powerful action on the heart, and it was observed that arrested action of the heart was an almost constant phenomenon resulting from the influence of that alkaloid. This occurs during diastole, a special feature which characterizes only a limited number of poisons, of which muscarine is an example. But when a drop of a solution of atropine was allowed to fall on the heart, the diastole was replaced by systole, whereas the effect of cinchonamine was to provoke persistent diastole. Sée and Bochefontaine proved that cinchonamine is a most violent poison, but that its effect is not easily determined.

Dr. A. Chantemesse recently made a very interest-

ing communication to the Clinical Society of Paris on a new method of treating obstruction of the intestines. The author related the case of a man, aged 59 years, who was admitted into Professor Bouchard's ward at the Lariboisière Hospital, on the 5th of January last, with marked symptoms of intestinal obstruction, such as tympanites, intestinal contractions perceptible during palpation of the abdomen, fæcal vomiting, and anuria. There was complete retention of the alvine evacuations, the patien was in an almost moribund state, and yet, as far as his bowels were concerned, he recovered completely in a fortnight, the following treatment having been adopted in the case: Half a tumbler of Vichy water was introduced into the stomach by means of an India-rubber tube (Faucher's); immediately after this, about 2 litres of a yellowish liquid, and of an offensive acid odor, was drawn off. Soon after this, the swelling of the epigastric region diminished, and the patient felt considerably relieved. There was, however, no movement from the bowels, which were much distended by gas and liquids. On the second day of treatment, the same symptoms persistently, the washing out of the stomach was repeated, giving issue to about a litre of the same offensive liquid as before. In the afternoon of the same day a purgative enema was administered, and the patient had a copious evacuation of a yellowish, fetid liquid from the bowels. The pain and size were diminished on the third day, the vomiting stopped, and, after another purgative enema, several evacuations from the bowels were produced, the matter being scanty, yellowish and fetid. After this the patient continued to improve; no other treatment was adopted beyond a little ice by the mouth, and on the twentieth day the symptoms of obstruction had disappeared; but another complication was discovered. The buttocks of the patient were covered with small boils, the mouth was studded with aphthæ, and he was greatly emaciated.

This case led Dr. Chantemesse to make the following observations: It is impossible to determine the cause of obstruction of the intestines. He thought that the case under consideration was a good example of the intoxication of the organism by the absorption of intestinal matter in a state of decomposition, to which was evidently due the breaking out of the boils and aphthæ referred to. As regards the therapeutic method employed to overcome the obstruction of the bowels, Dr. Chantemesse acknowledges that it had been adopted for the first time by Kussmaul, and at the meeting of the Medical Society of Berlin, which was held on the 10th of December last, M. Senator related three cases which, added to the four previously reported by Kussmanl, would make seven cases of intestinal obstruction cured by the washing out of the stomach.

As to the rationale of this method, it is difficult to explain. M. Senator suggests that the beneficial result obtained by the washing out of the stomach was effected by the excitement of splanchnic nerves. This explanation, however, is rather vague. Dr. Chantemesse is disposed to believe that the washing out of the stomach produces an effect analogous to that caused by the application of descending continued currents in the treatment of ileus, the result being probably due to prolonged intestinal contraction. But whatever theory may be advanced, the favorable results that have been obtained in the examples recorded, although they are few in number, are sufficiently encouraging to justify the adoption of this new method in other cases.

Having heard of a new clinical thermometer, which has just been patented by M. Lucien Viallet, an enterprising commission agent in Paris, I determined to try it in order to bring it to the notice of your readers. It is a straight, self-registering centigrade thermometer, and graduated to one-tenth degree. By a peculiar mechanism an entire absence of air space is effected, and there is a minute contraction in the stem, which, with every rising of the mercury, cuts off the entire column above it, thus forming an index of the temperature; this remains after the removal of the thermometer from the patient. Each time the instrument is required, it must be shaken before it is applied again in order to make the mercury descend. By this new system, the mercury would have only half the distance to descend, and thus require only half the time that is required by other thermometers, which is an immense advantage to busy practitioners, whose every minute is of value to them. The new thermometer is put up in cases of German silver the length of which is 5.069 inches. Any further information regarding this thermometer may be obtained from your Paris Correspondent. A. B.

## DOMESTIC CORRESPONDENCE.

### PHILADELPHIA LETTER.

(FROM OUR OWN CORRESPONDENT.)

*The Winter at an End—The Medical Schools—Vivisection—The Chair of Chemistry in the Jefferson Medical College—The Chair of Physiology in the University of Pennsylvania—The County Medical Society Lectures—The Medical Jurisprudence Society.*

The long winter seems at length to be coming to an end, and none too soon for most people in this latiude, where there has been a very unusual amount of sickness and an unusually large number of deaths for the season. We have had not only an unpleasant winter, but one exceedingly dangerous to health, and as a matter of consequence the doctors hereabouts have been unusually busy. After the tire of the winter's work most of them will probably be glad of the short rest which they usually get about this time of the year.

In the medical, dental and pharmacal schools, the annual time of parturition has come around. Some of them have indeed already had their lying-in and have sent their progeny out upon the world. The Women's Medical College, an institution which holds a proud position in connection with the education of women, had a very imposing commencement this year. The annual address was delivered by Dr. W. W. Keen, who took for his subject "Vivisection,"

or what is known by that name nowadays. It is needless to say that in a school which represents such advanced ideas in science, although intended for the gentler sex, this subject was not treated in a purely sentimental way. The doctor made a good stand against the extreme accusations which are brought against animal experimenters by the anti-vivisectionists. This has led to some newspaper discussion, in which Dr. Owen Wistar, one of the most frank and corrageous opponents of unlimited vivisection in the city, offered a correction of some of the statements made by Dr. Keen, as he understood them. To this Dr. Keen has already made a temperate reply. The subject of vivisection has been attracting a good deal of attention lately, on account of the efforts of the anti-vivisectionist society to have a bill passed through the legislature restricting and regulating vivisection, and the efforts of the most prominent experimenters in this city, generally endorsed by the medical profession, to prevent the passage of this bill. So far the bill has not passed, and does not appear likely to pass. Unfortunately, in this city the efforts of the anti-vivisectionists seem to be, or have been supposed to be, directed against certain well known experimenters. This has led to a struggle, assuming a personal character, and assertions have been made in regard to both sides, which were not only disagreeable, but which on sifting, were found to be hard to prove. The agitation, however, can hardly fail of doing good; for, on the one hand, the anti-vivisectionists will learn that vivisection as practiced nowadays is not the unreasonable and cruel thing which it once was, and the experimenters, on the other hand, will probably be influenced to still greater care that their experiments shall not even seem to be cruel. And one who does not see how experimentation upon living animals can well be spared from the workshops of science may hope that a fair discussion of the subject may lead to restricting it within the narrowest limits consistent with reason.

There are two professorial positions in Philadelphia now unoccupied,—the chair of chemistry in the Jefferson Medical College, and the chair of physiology in the University of Pennsylvania. The former is once more opened to candidates on account of the unexpected and speedy resignation of Professor Mallet, whose leaving Philadelphia is a cause of general regret. The resignation of the chair of physiology by Professor Harrison Allen makes an opening for some active physiologist. At present the candidates whose names are seriously mentioned in connection with this chair are three graduates of the University of Pennsylvania, all of whom have been engaged in experimental work and have secured excellent reputation. The rumor is that the chair will not be filled immediately, but that one of the candidates will be selected to lecture for a year, at the end of which time the chair will be filled.

Among the minor excitements of the winter has been the establishment of a series of lectures on accidents and emergencies to be delivered at the Blockley almshouse. These became so popular that tickets had to be issued, for the lecture hall was literally crowded to overflowing again and again, by women who came to listen to a description of methods for resuscitating the drowning, the hanging, the asphyxiated, as well as the first care of those who had received various lesser or greater injuries. The rush to these lectures was probably simply a fashion, and could hardly be taken as an evidence of a desire of Philadelphia women to become familiar with these subjects.

The County Medical Society has recently inaugurated a series of public lectures, to be given under its auspices at its meeting hall, and to which the general public are invited, to listen, and, if they choose, to take part. At these meetings topics of general public interest are to be discussed. At the first one Dr. Shakespeare lectured upon the "Tubercle bacillus," and its relation to the public health. At the second Col. Ludlow, an officer in the United States Engineer Corps, who is at present most efficiently discharging the duties of chief of the water department of this city, is to give a lecture on the relation of the water supply to the health of the city. The giving of these lectures marks another of the advances which are continually being made by members of the medical profession to distribute to the community the special knowledge which they have gathered.

Another of these steps was marked over a year ago by the formation here of a Medical Jurisprudence Society, which has been very successful, securing the membership and work of some of the most intelligent of the members of both the legal and medical professions of this city. At their meetings the lawyers and the doctors sometimes very plainly occupy their own peculiar standpoints. This was illustrated not long ago in the discussion of a case where a man had been hanged for a most brutal murder committed in the penitentiary on a keeper. The man was declared to be insane by several well-known witnesses in regard to insanity. The commonwealth, however, succeeded in preventing the man's acquittal on this plea, and in due time he was hanged. The subject was discussed before the Medical Jurisprudence Society, and the doctors and lawyers who had stood on opposite sides in the court-room renewed their struggles before the jury of their fellows in the society room. Here the medical experts expressed their opinion as to the absurdities of the laws in such cases, and the district attorney replied with some natural opinions about medical experts. The discussion was animated, and, while it did not lead to any agreement then, will doubtless be of advantage to both sides in the end. And, at any rate, such meetings of men engaged in the work of different professions can hardly fail to do good. Certainly no one would deny their utility in Philadelphia.

C. W. D.

## THE SOUTHERN PLAGUE.--ENDEMIC DYSENTERY.

[In our issue of March 14, we stated, in the miscellaneous columns, that what was believed to be a disease similar to that which carried off quite a number of people in Kentucky and West Virginia last fall, had appeared in Lancaster county, South Carolina. We have just received the following note concerning it:]

Dear Sir—Pursuant to your request, I will briefly

describe an endemic dysentery, adynamic in type, and not readily yielding to treatment, which has appeared in this county. As will be seen, it has caused quite a large percentage of mortality. In the majority of the cases the affection has been ushered in by nausea and vomiting, soon followed by bloody and mucous discharges from the bowels. In its early stages the temperature ranges from 99° to 101.5° Fah., but falling as low as 95° in some of the cases after eight or ten days. The pulse was quick and compressible in the cases of two patients who died; in one of these there was complete suppression of urine for two days, in the other for five days. The state of the peripheral circulation, the pulse and the fæces were such as to justify one in classing this affection as a low, adynamic or typhoidal disease; and consequently, alcoholic stimulants, tinct. opii, camphor, bismuth, and in some cases calomel, were used, with charcoal to correct fetor. The belief that malarial poison was a factor in the etiology of the disease would have prompted the liberal use of quinine, but vomiting prevented its continued use. In the cases in which it was tolerated by the stomach it seemed to be of service.

The number affected were: whites 8, five deaths; colored 10, no deaths. The dwelling occupied by the family, of which five died, is less than 400 yards from a sluggish creek, and about the same distance from a fish-pond, and less than 200 yards from a large quantity of sawdust, much of which is of oak, and the portion in contact with the ground is constantly moist. Chills are prevalent on this creek during the autumn months.

As regards this disease being the same as that known as the "southern plague," so fatal in Kentucky and West Virginia last fall, I will say that in my opinion they are entirely different.

I am very truly,

J. H. Foster, M.D.

Lancaster C. H., So. Car.
March 14, 1885.

## BOOK REVIEWS.

The Principles and Practice of Gynæcology. By Thomas Addis Emmet, M.D., LL.D., etc. Third edition, thoroughly revised, with one hundred and fifty illustrations. 8vo. Pp. xxiv, 876. Philadelphia: Henry C. Lea's Son & Co., 1884. Chicago: Jansen, McClurg & Co.

It is scarcely necessary to do more than call the attention of our readers to the fact that the third edition of Dr. Emmet's work on Gynæcology has appeared. We are prepared to place full credence in the statement of the author that the advance and change of views during the past four years have been so great in this department, that the preparation of this edition has necessitated almost as much labor as rewriting the book. The chapters on the relations of education and social condition to development have been almost rewritten; as have those on pelvic cellulitis, the diseases of the ovaries, on ovariotomy, and on stone in the bladder. So also, the chapters on prolapse of the vaginal walls, on lacerations at the vaginal outlet and through the sphincter ani and perinæum; on the methods of partial and complete removal of the uterus for malignant disease, the surgical treatment of fibroid tumors, diseases of the Fallopian tubes, and on diseases of the urethra, are in many respects new, containing the experience and views of the author in a form not hitherto presented, and one hundred and seventy-five pages of new material have been added to these chapters.

There is just one point in this edition to which attention may very properly be called. The author remarks that it is a notable circumstance that those who have given up the use of the spray (carbolic) in Great Britain, have shown the best results (in ovariotomy). "After the last operation I witnessed by Mr. Thornton, I determined never to use the spray again. I suffered for hours with headache and backache, with nearly entire suppression of the action of my kidneys. I was forced to the conviction that if I could suffer to such an extent with my kidneys free from disease, as I believe, the consequences must sometimes be very serious with a patient in a condition less able to withstand the toxical effects." We give the above quotation because the carbolic acid war still rages on both sides of the Atlantic; but it is war in which the principal participants do not suffer so much as the parties of the second part—the patients. Dr. Emmet does not regard the use of a spray injurious in the operation; on the contrary, he expressly says: "A moist atmosphere is better fitted for the exposed peritoneum, so that the spray apparatus can be utilized to advantage in keeping the atmosphere of the room in a sufficiently moist condition." We give this sentence as it stands in the book, because the author has evidently been misinterpreted by Dr. Homans in a recent letter to the Cincinnati *Lancet and Clinic*, of March 14. To hold, in view of recent results and statistics, the carbolic acid spray, or carbolic acid in any form, is necessary or in anywise useful in abdominal surgery, is scarcely less than denying that one should be guided by experience; and we regard this as stating the proposition mildly.

Manual of Nervous Diseases and an Introduction to Medical Electricity. By A. B. Arnold, M.D., Professor of Diseases of the Nervous System and Clinical Medicine, College of Physicians, Baltimore, Md. With illustrations. Pp. vii, 170. New York: J. H. Vail & Company, 1885.

We are not disposed to be captious, and we are not dyspeptic, but it is well to remind the author of this book that there are no "Diseases of Clinical Medicine," as the title implies. Within the short compass of 170 pages the author has attempted to write three treatises for the classical and well-worn "Beginner." There is an introductory chapter on the anatomy and physiology of the nervous system, which "is particularly intended to draw the student's attention to the recent and important accessions to neurology." This introductory chapter covers twenty pages. Then comes a chapter often pages, on "General Symptomatology of Nervous Diseases"; and

sandwiched between this and the fourth, on "Special Pathology and Therapeutics," is one of eleven pages on "Medical Electricity." The title of this truly elementary treatise is too little comprehensive by far. What the student (!) will find in the chapter on the anatomy and physiology of the nervous system, is less than one-tenth of what he should have already learned before he is allowed (or should be allowed) to hear a clinical lecture on any subject.

There are some books the writing of which is inexcusable, and on careful reading of this one, we are forced to think that it occupies a high place in that objectionable list.

## ASSOCIATION ITEMS.

SECTION ON STATE MEDICINE, AMERICAN MEDICAL ASSOCIATION.—In view of the increasing interest taken by the profession and the public at large in questions of state medicine, and especially in view of the possible cholera invasion that threatens us, it is hoped and believed that the coming sessions of this section at New Orleans will be of more than ordinary interest. All those having papers to present before this section are urged to send the titles thereof, without delay, to one of the undersigned.

E. W. SCHAUFFLER, *Chairman*,
Kansas City, Mo.

J. N. MCCORMACK, *Secretary*,
Bowling Green, Ky.

AMERICAN MEDICAL ASSOCIATION—SECTION ON OBSTETRICS AND DISEASES OF WOMEN.—The following is the list of papers to be read before the Section on Obstetrics and Diseases of Women at the New Orleans meeting in April:

1. Vaginal Hysterectomy for Cancer. By A. Reeves Jackson, M.D., of Chicago, Ill.

2. Chronic Periuterine Abscess; Its Treatment by Laparotomy. By Christian Fenger, M.D., of Chicago, Ill.

3. "The Ring of Bandl." By W. W. Jaggard, M.D., of Chicago, Ill.

4. Treatment of the Pedicle. By Thadeus Reamy, M.D., of Cincinnati, O.

5. Emmet's Operation; When Shall It and Where Shall It be Performed? By Gustav Zinke, M.D., of Cincinnati, O.

6. Notes on Surgical Gynæcology. By Horatio R. Bigelow, M.D., of Washington, D. C.

7. Uterine Stem in Flexions of the Uterus. By Geo. B. F. Fundenburg, M.D., of Pittsburgh, Pa.

8. Reasons for and Results of Some Cases of Tait's Operation. By S. C. Gordon, M.D., of Portland, Me.

9. How Soon After Exposure to Sepsis May the Accoucheur Resume Practice? By Geo. F. French, M.D., of Minneapolis, Minn.

10. A New Speculum and a New Vaginal Irrigator. By Thadeus M. Healy, M.D., of Cumberland, Md.

11. A New Wire Speculum. By W. C. Wile, M.D., of Sandy Hook, Conn.

12. The Multiple Speculum Uteri and an Improved Dressing Forceps. By R. J. Nunn, M.D., of Savannah, Ga.

13. Parametric Abscess. By W. W. Potter, M.D., of Buffalo, N. Y.

14. The Role of Bacteria in Obstetrics. By H. O. Marcy, M.D., of Boston, Mass.

15. Treatment of the Secundines in Abortion and Labor. By W. H. Wathen, M.D., of Louisville, Ky.

16. Subject to be announced. By Geo. J. Engelmann, M.D., of St. Louis, Mo.

No. 17. PELVIC Peritonitis; Suggestions as to Causes, Recognition and Treatment. By Wm. M. Polk, M.D., New York city.

This will about complete the list. The papers *must not be over twenty minutes long.*

J. T. JELKS, M.D., *Secretary*.

HOT SPRINGS, ARK., March 24, 1885.

ROCKY MOUNTAIN MEDICAL ASSOCIATION. — The annual premium of the members of this association will be held in the parlors of the St. Charles hotel, New Orleans, on Wednesday evening, April 29, 1885. It is hoped that the members will be prompt in attendance. JOHN MORRIS, *Secretary*.

RAILROAD FACILITIES TO NEW ORLEANS.—At the request of many members of the American Medical Association, the Illinois Central railroad has arranged to run a special train of Pullman palace buffet sleeping cars for the accommodation of themselves, their families and friends who wish to attend the meeting of the Association, which convenes in New Orleans April 28, and continues until May 1. This also gives a grand opportunity to visit the world's exposition.

The special train will leave Chicago Saturday evening, April 25, at nine P.M., and run through to New Orleans without change, reaching there at nine o'clock Monday morning, April 27, only thirty-six hours en route. The rates for the round trip are as follows: Tickets good for return within fifteen days, $20; tickets good for return within forty days, $25; tickets good for return until June 1, $30. Parties desiring to return by another route, either via Louisville, Cincinnati or St. Louis, will be provided with tickets at $5 in excess of above rates.

Sleeping-car Rates — Chicago to New Orleans, one double berth, $6; Chicago to New Orleans, one section, $12. Please apply early to C. S. Burton, ticket agent, 121 Randolph street, for berths, or address the undersigned. A. J. HANEON, *G. P. A.*

PROVIDENCE, R. I., March 30, 1885. — Delegates from New York, on the line of N. Y. C. & H. R. R. R., who desire to join the party from New England, which will go through from Boston to New Orleans without change, can do so by making application to Dr. W. E. Armstrong, 36 Benefit street, Providence, R. I., and sending $11, price of double berth (half section), for one way, or $22 for round trip, *before April* 15. Fares for round trip: From Albany, $36.40; Syracuse, $33.25; Rochester, $31.65. Trains will leave Albany, April 24, 10.15 P.M.; Syracuse, April 25, 2.35 A.M.; Rochester, 5.05 A.M.; Buffalo, 7.05 A.M.

## MISCELLANEOUS.

FACTS FOR ANTIVACCINATIONISTS.—The *British Medical Journal* of March 7 states that while the deaths from smallpox last year, throughout the entire German empire, averaged one or two a week, and never exceeded four, there died in Prague, a city of about 270,000 inhabitants, no fewer than eight hundred and twenty-eight persons between January and June, besides four hundred and nine in the last four months of 1883. Between October 1, 1883, and March 31, 1884, fifty-six cases, nearly all children under five years of age, were admitted into the Polyclinic Hospital. Of these, fifty-two were unvaccinated and four vaccinated; two of the latter, however, not until after infection. Of the fifty-two unvaccinated, 21 per cent. died; of the vaccinated, none. Buenos Ayres is a city of about 287,000 people; and vaccination is unpopular and not compulsory. While the births in 1883 were about 11,000, the total number of vaccinations and revaccinations was 8,643. The deaths from all causes were 8,248, or 28 per 1,000; and those from smallpox 1,487, or 5 per 1,000 of the population, and 18 per cent., or nearly 1 in 5 of the total deaths. In Prussia, the mortality since 1875 has been from 0.34 to 3.62 per 100,000 yearly; in Austria, 5.57 to 50.83; in Berlin, in 1882, it was 0.43, and in Vienna 108.29 per 100,000. Since 1875 not a single Prussian soldier has died of small-pox; in the Austrian army, 10 to 47 per 100,000 annually; and in the French, 2 to 27 per 100,000 have died.

MEETING OF THE ILLINOIS STATE BOARD OF HEALTH.—The Illinois State Board of Heath will hold a meeting at the Grand Pacific hotel in Chicago, on Thursday, April 16. This is the meeting at which the annual examination of candidates for certificates is held, and such candidates are notified that the examination will cover the subject of preliminary education.

DR. T. H. WINGFIELD died at his residence near Baltimore, Md., on March 30, at the age of fifty-two years. He was attached to the staff of General Lee, as Surgeon, during the late civil war.

FATAL CHICKENPOX.—Two fatal cases of chickenpox, one reported by Dr. G. W. Rachel, in the *Archives of Pediatrics*, for April, 1884, the second by J. V. Wichmann, of Copenhagen, in the *Nordiskt Med. Arkiv*, xvi, No. 20, show that varicella is not always the mild disease which is its general characteristic.

AN ANTI-CHOLERA APPROPRIATION.—The Appropriation Committee of the Illinois Legislature decided two weeks ago to put in the General Appropriation bill a clause for $40,000 for the State Board of Health, as a contingent fund to be used in case of an outbreak of cholera, instead of the $85,000 recommended by the board as necessary. It is believed the amount named in the bill will be increased by the Legislature.

NEW CONTRIBUTIONS TO BACILLUS LITERATURE.—As the first literature of the cholera bacillus was in the German language, it seems eminently proper that the first verse in which this microbe figures should also be in that language. *Die neue Welt* is responsible for the following:

Ein Cholerabacillus sitzt einsam
Im Schiffe auf wogender See,
Er kann sich am Bord nicht vermehren,
Das thut ihm im Herzen so weh.

Er träumt von einer Bacilla
Am fernen Choleraheerd,
Die sich in jeglicher Stunde
Um einige Tausend vermehr.

NEW YORK STATE MEDICAL ASSOCIATION, FIFTH DISTRICT BRANCH.—The second special meeting of the Fifth District Branch will be held in Poughkeepsie on Tuesday, May 19, 1885.

THE CHICAGO MEDICAL COLLEGE held its annual commencement on Tuesday, March 24. Forty-one graduates received the degree of Doctor in Medicine. In the evening a banquet was given at the Leland Hotel.

THE NEBRASKA STATE MEDICAL SOCIETY will hold its seventeenth annual meeting at Grand Island, on Tuesday, May 26, 1885.

DR. STANFORD E. CHAILLE has been appointed by the President to fill the vacancy in the National Board of Health caused by the death of Dr. Bemiss.

THE MEDICAL ASSOCIATION OF GEORGIA will hold its annual meeting in Savannah on April 15, 16 and 17.

THE AMERICAN SURGICAL ASSOCIATION will meet in Washington, D. C., on April 21, 22, 23 and 24. From the list of papers on the programme this meeting promises to be exceptionally interesting.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM MARCH 21, 1885, TO MARCH 27, 1885.

Havard, Valing, Captain and Assistant Surgeon, leave of absence extended one month. (S. O. 65, A. G. O., March 21, 1885.)

Raymond, H. I., First Lieutenant and Assist Surgeon, assigned to duty at Fort Gaston, Cal., Post Surgeon. (S. O. 30, Department of California, March 20, 1885.)

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE UNITED STATES MARINE HOSPITAL SERVICE, FOR THE WEEK ENDED MARCH 28, 1885.

Sawtelle, H. W., Surgeon, Detached as chairman of physical examination of the Revenue Marine Service, March 17, 1885.

Armstrong, S. T., Passed Assistant Surgeon. Granted leave of absence for thirty days. March 16, 1885.

Ames, R. P. M., Surgeon, Detailed as recorder of Board for physical examination of officer of the Revenue Marine Service, March 17, 1885.

Battle, K. P., Assistant Surgeon, to proceed to Memphis, Tenn., for temporary duty, March 27, 1885.